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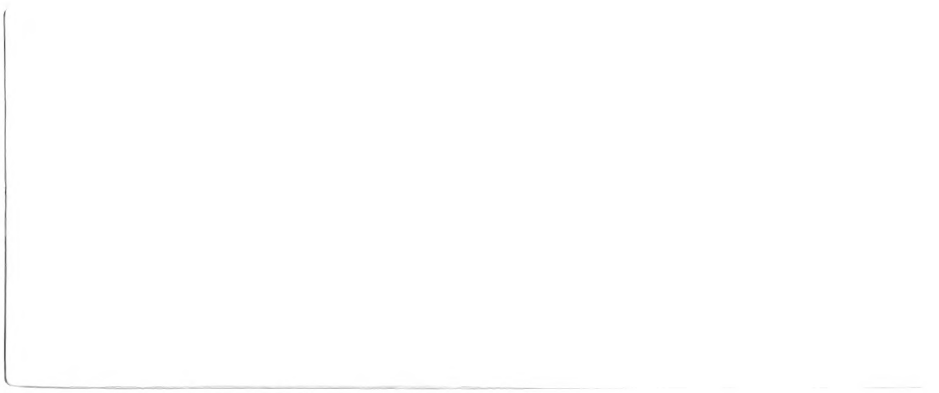

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The Relative Informativeness of Accounting Disclosures in Different Countries

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July, 1993

Acknowledgements: Financial assistance was obtained, in part, from a CIBER grant from the Graduate School of Business at the University of Chicago. We have benefitted greatly from the suggestions and advice of Fred Just and Gunter Schmitt of Commerzbank, and from the comments of an anonymous referee, Mary Barth, Keith Bockus, Peter Easton, Ken French, David Hawkins, Bob Holthausen, Jennifer Francis, Krishna Palepu, Grace Pownall, Rudi Schadt, Katherine Schipper, Amy Sweeny, Sheridan Titman, Peter Wilson, and workshop participants at the *Journal of Accounting Research* 1993 Conference, Harvard University, Hong Kong University of Science and Technology, and Nanyang Technological University (Singapore). We are grateful for that generous assistance.

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1. Introduction.

This paper compares the information content and timeliness of accounting earnings in several countries using the United States as a benchmark. We perform two types of analyses. The first, based on the seminal work of Ball and Brown [1968], examines the contemporaneous association between the sign of unexpected earnings and stock returns. The second estimates a regression model of long-window stock returns on the contemporaneous level and change in earnings. Our investigation provides evidence on whether differences in capital markets — accounting standards, disclosure practices, and corporate governance — lead to significant differences in the usefulness of accounting earnings. The effect of these differences is important given greater integration of capital markets and the resulting debate in the United States over the appropriate listing requirements for foreign stocks.

We analyze an extensive set of countries to obtain a wide variety of accounting standards and information environments as well as to produce a comprehensive set of results using a relatively new database, the *Global Vantage* Industrial/Commercial and Issue files for the 1983-1990 period.[1] Our results reveal significant differences in timeliness and information content of accounting earnings across the sampled countries. According to our measures of information content and timeliness, annual accounting earnings from Australia, France, the Netherlands, and the United Kingdom are at least as informative and timely as U.S. accounting earnings. The annual accounting earnings from Canada, Ireland, Norway, and South Africa convey information that is as timely and value-relevant as U.S. accounting earnings. In contrast,

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[1]Alternative research designs, while they have advantages, also have limitations. Our design is not conducive to an in-depth analysis of the reporting practices of a particular country, nor to an analysis of the reporting practices of different firms within a particular country. Similar issues arise when choosing research designs for U.S. data.

annual accounting earnings from Germany, Hong Kong, Japan, and Switzerland reflect less timely or value-relevant information than U.S. accounting earnings, while the accounting earnings from Belgium, Denmark, Singapore, and Sweden reflect substantially less timely and value-relevant information than U.S. accounting earnings. Our research adds to the existing international accounting literature on the contemporaneous association between stock return metrics and accounting earnings.[2]

The remainder of the paper is organized as follows. In section 2 we discuss U.S. financial reporting requirements for non-U.S. stock listings. Section 3 summarizes the financial reporting requirements for the various countries included in this study. In section 4 we describe the sample selection process. Section 5 examines the relation between stock returns and accounting earnings, and reports measures of information content and timeliness for accounting numbers in each of our sampled countries. Section 6 concludes our paper.

2. Foreign Listing Requirements in the United States.

Under existing U.S. regulations, non-U.S. firms can list their securities in the United States by either issuing a prospectus and satisfying a panoply of SEC reporting requirements (including quarterly Form 10-Q reports and an annual Form 10-K report), or by listing American Depository Receipts (ADRs) and filing an annual Form 20-F (and a semi-annual Form 6-K) that reconciles earnings based on foreign generally accepted accounting principles (GAAP) with the

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[2]The contemporaneous association between stock return metrics and accounting income is a popular research topic throughout the world. Some references for studies examining this relation on non-U.S. data are Forsgardh and Hertzen [1975], Coenenberg and Brandi [1976], Gray [1980], Meek [1983, 1985, 1991], Maingot [1984], Sakakibara, S., H. Yamaji, H. Sakurai, K. Shiroshita, and S. Fukuda. [1988], Weetman and Gray [1990], Darrough and Harris [1991], Lee and Livnat [1991], Strong and Walker [1991], Chu and Ronen [1992], Pope and Inyangete [1992], Pope and Rees [1992], and Smith and Tremayne [1992].

corresponding U.S. GAAP number.[3] These listing requirements for ADRs are less stringent than those for U.S. firms; for example, foreign issuers can report semi-annually instead of quarterly and need not report segment data.[4] Moreover, since 1991, foreign companies have been allowed to sell unregistered stock to large institutional investors, and Canadian firms can issue securities and list on a U.S. exchange by following Canadian financial reporting requirements.[5]

Although financial reporting requirements for ADRs are less extensive than those for U.S. firms, the American Stock Exchange (AMEX) and New York Stock Exchange (NYSE) have nonetheless lobbied the U.S. Congress and the U.S. Securities and Exchange Commission (SEC) to further ease these requirements.[6] These lobbying activities have generated a debate in the U.S. about global competition for exchange listings. In this debate, the Chairman of the SEC has criticized the quality of the financial reporting of non-U.S. firms because of allegedly less stringent financial reporting requirements in most other countries throughout the world.

The SEC and its supporters appear to view global competition in terms of the "race to the bottom," with the eventual winners being the countries that offer the least stringent exchange

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[3]Prior to 1983, the SEC allowed foreign stocks to list on the National Association of Security Dealers and Quotation (NASDAQ) system without following all of these financial reporting requirements, and foreign firms listed before 1983 can continue to trade without following these financial reporting requirements.

[4]U.S. auditors may issue a qualified opinion if a firm does not report segment data; see, for example, the pre-1992 financial reports for Sony and Honda.

[5]See Meek and Gray [1989], Saudagaran [1991], Frost and Pownall [1992a, 1992b], for a detailed discussion of cross-country financial reporting requirements.

[6]The lobbying activities began in 1986, when the AMEX and NYSE first requested that the SEC change the listing requirements for non-U.S. stock listings (see Henriques [1986] for a discussion of these activities).

listing (and financial reporting) standards, and the most pro-management standards;[7] for example, Mr. Breeden, Chairman of the SEC, is reported to have said, "We try to be flexible where we can. ... But we have no intention of becoming the world's capital for fraudulent financial actions."[8] Some critics have predicted that adopting the NYSE proposal would provide incentives for large U.S. corporations to reincorporate in a foreign country and obtain foreign listing status in the U.S. to take advantage of allegedly less costly foreign reporting requirements; and the managers of some NYSE firms express concern that non-U.S. firms would be given a competitive advantage if the NYSE proposal is adopted.[9]

On the other side of the debate, the AMEX, NYSE, and their supporters argue that the winners in this competition will be stock exchanges in countries that allow firms to raise capital at the lowest cost, net of the costs and benefits of the reporting requirements.[10] Mr. Donaldson, Chairman of the NYSE, is reported to have said, "It may well be that some of the foreign accounting methods are better than those in the U.S. ... Germans are proud of their accounting methods ... U.S. standards haven't been enough to stop fraud at some American companies."[11] The vice president of development at the NYSE, Mr. Britz, argues (***Chicago Tribune***, April 1,

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[7]See Grundfest [1990, 1993].

[8]S. Antilla, June 17, 1991, ***USA Today***.

[9]For example, Mr. Breeden, Chairman of the SEC, is reported in to have said, "We expect General Motors and Ford and Chrysler to have to book liabilities for post-retirement benefits. Daimler-Benz would come in and report a zero for that. And they're each trying to sell stock to an investor in Peoria, Ill., for his IRA. You will have created a preference for the foreign company." See K. Salwen and M. Siconolfi, ***Wall Street Journal***, May 13,1992.

[10]See Saudagaran [1988], Biddle and Saudagaran [1989, 1991], and Saudagaran [1991] for an examination of non-U.S. stock exchange listing decisions.

[11]W. Power, ***Wall Street Journal***, July 1, 1992.

1990) that U.S. investors purchasing foreign stock on foreign stock exchanges "... face extra fees, transaction delays and uncertain foreign currency translations ... 'Individual investors, like anybody else, want to diversify and are realizing that not all of the world's best companies are located in the United States,' Britz said."[12]

In essence, this is a debate about the cost-benefit tradeoff associated with U.S. reporting regulations. The SEC Chairman's position seems to assume that the private benefits of the regulations are higher than the private costs. The SEC's Chairman indicates that protecting the investor, not the profits of the stock exchange, is the objective of the SEC. The SEC appears to be concerned investors will use non-U.S. GAAP accounting numbers naively in the same way they use U.S. GAAP accounting numbers: "... investors might select a foreign company's stock ... only to discover later that differences in accounting or auditing standards made the foreign stock look better."[13]

Regulators' concerns about non-U.S. accounting standards focus on the vulnerability of reported earnings to earnings management, together with concern about the lack of informativeness and timeliness of reported accounting numbers (primarily accounting income),

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[12]The NYSE indicates that the commission costs for a U.S. investor buying stocks on a non-U.S. exchange is eight to ten times higher than the commission costs of buying stocks on U.S. exchanges (see the *Wall Street Journal*, May 13, 1992). Grundfest [1993] argues that the SEC should look at private costs and benefits in its regulatory decisions, and that global capital market competition is going to force the SEC to do so since the U.S. no longer has a monopoly on raising capital, even for U.S. firms. Edwards [1993] argues that U.S. investors would require a higher expected return for any increase in risk of a non-U.S. firm listing in the U.S. and providing inferior financial disclosures. Baumol and Malkiel [1993] argue that SEC disclosure requirements on non-U.S. firms force U.S. investors to purchase stock in non-U.S. capital markets that have higher transactions costs, higher bid-ask spreads, and less liquidity; further, business is lost by the U.S. capital markets, and some investors may even lose the opportunity to diversify internationally.

[13]See K. Salwen, *Wall Street Journal*, May 3, 1991.

undue reliance on taxation regulations for financial reporting measurement rules, the (in)frequency of disclosure, and the paucity of detailed disclosures. German reported accounting numbers are pilloried, primarily because sketchily disclosed transfers to and from reserves can be used to manipulate reported income. Even though firms from all other Western economies are represented among the ADR listings on U.S. exchanges, there are no German ADRs, leading some U.S. critics to infer that German managers value the ambiguity of German accounting numbers.[14]

3. Non-U.S. Domestic Financial Reporting Requirements.

Exhibit 1 summarizes the current financial reporting requirements and approximate statutory income tax rates for non-U.S.countries included in this study.[15] The exhibit reports the requirements applying to the largest companies listed on a stock exchange in each country.[16] Important differences are obvious across countries. Most observers conclude that the frequency (number of financial reports per year) and reporting lag (time lag between the fiscal period end

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[14]Press reports suggest that Daimler-Benz has reached agreement with the SEC and will list in the U.S. after "revealing" hidden reserves of several billion dollars. See *The Economist*, April 3 1993, p. 76.

[15] The exhibit summarizes only the mandatory reporting requirements currently in effect, and thus represents a lower bound on financial disclosure in these countries. Reporting requirements and tax rates have changed over time. We have not systematically cataloged the financial disclosure practices in the sample countries. For instance, even in the much-maligned financial disclosure environment of Germany, large firms produce information releases that exceed the statutory reporting requirements (such as quarterly reports). Moreover, German analysts virtually ignore reported earnings and rely instead on an elaborate set of technical procedures to estimate an alternative earnings measure. The German Institute of Financial Analysts (DVFA) has a specific method of adjusting earnings to make them more useful. See Harris, Lang, and Moller [1993], Graham, Pope, and Rees [1992], and Rees, Pope, and Graham [1992] for a discussion and analysis of DVFA adjusted earnings.

[16] Several countries, including the United States, have requirements that differ based on company size and listing status.

and the statutory report date) of accounting reports from Japan, Singapore, and the U.S. lie at one end of the spectrum, with Ireland and Germany at the other.[17]

The source of GAAP (column one) and the alignment of financial and tax accounting (column six) provide information about the factors influencing the development of GAAP in each country. In the U.S., GAAP are derived from both public (SEC) and private (FASB) sources, and the alignment of financial and tax accounting is low. Seven of the other 17 countries share this public/private source of GAAP. For nine countries, GAAP are derived from only government sources, while Canada is unique in that Canadian GAAP are derived solely from the private sector. Half of the non-U.S. countries have, like the U.S., a low alignment of tax and financial accounting.

There appears to be a relation between the source of GAAP and the alignment of financial and tax accounting; of the nine countries for which local GAAP are derived only from a governmental body, eight also have a high level of alignment between financial and tax accounting (Belgium, France, Germany, Italy, Japan, Norway, Sweden and Switzerland). We also report the disclosure ranking developed by Saudagaran and Biddle [1991], where higher numbers reflect greater levels of public disclosure. Interestingly, the overall disclosure rank provided in column 8 is lowest for the countries with a high level of alignment between financial and tax accounting (France with a rank of 4, Japan with a rank of 3, Germany with a rank of 2, and

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[17]Many articles and books discuss the financial accounting and disclosure requirements of non-U.S. countries. A partial list includes Brooks and Mertin [1986], Bloomenthal [1989], Cooke [1989], Coopers and Lybrand [1989, 1991], UBS Phillips & Drew [1989], Choi [1991], IASC [1991], Giraud [1984], Peller and Schwitter [1991], Prudential Bache Securities [1987], Center for International Financial Analysis & Research, Inc. [1991], Nobes and Parker [1991], Brookfield and Morris [1992], Choi [1991], Choi, Harris, Leisenring, and Wyatt [1992], Choi and Mueller [1992], I/B/E/S [1992], and Merrill Lynch [1992].

Switzerland with a rank of 1).

The frequency and timing of financial reporting also vary across countries, as is illustrated in columns two through four of Exhibit 1. The United States requires the most frequent (quarterly) financial statements; only Norway and Canada share this requirement, and France requires quarterly reporting of revenues. All other countries except Switzerland (no interim reporting) require semi-annual reporting (column two).[18] The reporting lag for the interim reports (column 3) varies from 45 days in the United States to six months in Ireland. The reporting lag for the annual report can vary from three months (United States, Japan, Singapore) to eleven months in the Netherlands when extended by the shareholders (column four). If special extensions are ignored, Germany and Ireland have the longest annual reporting lags of eight and nine months, respectively.

The remaining columns of Exhibit 1 provide information regarding the governmental agencies regulating public companies (column five), GAAP required for financial reporting purposes (column seven) and the estimated statutory tax rate at the highest corporate tax bracket (column nine). Local GAAP are required for financial reporting purposes in every country except France, where IAS are an acceptable basis for preparing consolidated financial statements.

4. Sample Description.

The sample of non-U.S. firms is selected from the intersection of the *Global Vantage* industrial/commercial and issue files. *Global Vantage* is an international version of the annual

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[18]Sweden does not actually require semi-annual reporting but instead one interim report covering the first six to eight months of the fiscal year. Also, Norway permits quarterly or four-monthly reporting.

Compustat database comprising financial statement, market, and other data for approximately 7000 firms from approximately 30 countries for the period 1982-1990. We restrict our sample to industrial firms (SIC codes 2000-3999 or 5000-5999) to increase the homogeneity of our sample. *Global Vantage* classifies each firm-year observation according to one of 12 accounting standards and one of four levels of consolidation.[19] For our primary sample, we choose data prepared according to domestic standards (code DS) and full consolidation (code F). We exclude firm-years from the sample if, during the year, the firm changed fiscal year end, industry, accounting standard, or consolidation practice.

We include all countries with at least 100 firm-year observations with complete data, provided that there is at least one observation in each year of the sample period (1983 - 1990). A firm-year is included in the sample if data are available to calculate: change in net income, market value of equity at the beginning of the year, and stock market return for 21 months beginning at the start of the fiscal year. The 16 countries and numbers of firm-years resulting from this algorithm are: Australia (447), Belgium (163), Canada (855), Denmark (153), France (665), Germany (370), Hong Kong (118), Ireland (205), Japan (197), the Netherlands (308),

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[19]The twelve accounting standards (with Global Vantage codes in parentheses) are: domestic standards generally in accordance with IASC and OECD guidelines (DA), domestic standards for parents and domestic subsidiaries with native country or U.S. standards for overseas subsidiaries (DD), domestic standards generally in accordance with IASC guidelines (DI), domestic standards generally in accordance with OECD guidelines (DO), accounts reclassified to show allowance for doubtful accounts and/or accumulated depreciation as a reduction of assets rather than liabilities (DR), domestic standards (DS), domestic standards in accordance with principles generally accepted in the U.S. and generally in accordance with IASC and OECD guidelines (DT), domestic standards in accordance with generally accepted accounting principles in the U.S. (DU), combination of DR and MI (LJ), accounts reclassified by SPCS/Extel Financial to combine separate life insurance and nonlife insurance accounts (MI), modified U.S. standards (MU), and U.S. standards (US). The four levels of consolidation are full consolidation (F), consolidation of only domestic subsidiaries (D), no consolidation of subsidiaries or parent only (N), and non-consolidated holding company (H).

Norway (110), Singapore (190), South Africa (358), Sweden (170), Switzerland (250), and the United Kingdom (2,878).[20]

In addition to the primary sample, we select a secondary sample of observations based on standards other than domestic accounting standards and full consolidation if the sample meets the same data requirements as those for the primary sample. These secondary samples include Germany (domestic consolidation only), Germany (nonconsolidated), Italy (domestic accounting standards in accordance with IAS), Japan (nonconsolidated), Japan (modified U.S. GAAP, fully consolidated), and Japan (modified U.S. GAAP, nonconsolidated). Finally, to facilitate additional comparisons within countries, we include three other samples that do not meet the criteria for the minimum number of observations: Belgium (92 nonconsolidated observations), France (96 observations using domestic accounting standards in accordance with IAS), and Switzerland (60 nonconsolidated observations).

The industry composition of the sample in each country is summarized in Table 1. Clearly, even at the aggregated SIC code level, there are industry differences across sample countries. Table 2 provides some summary statistics describing the size of the sample companies in each country. For each country, we calculate the percentage of the firm-year observations that would fall in each of the size deciles of the U.S. Compustat sample of industrial firms each year. Table 2 reveals that, for nearly all of the sampled countries, most of the observations are above the median U.S. market capitalization. The dramatic size and industry effects reflect variations

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[20]The Global Vantage database is relatively new, and we are unsure of its accuracy. Consequently, we exclude firm-year observations that include variables outside the 1% and 99% range of the empirical distribution for that variable for each country. Many firms on the file have security prices for multiple issues, either concurrently or sequentially. We link sequential issues to form a single issue, and if the firm has concurrent multiple issues, we use the primary issue sequence to represent common equity.

in non-U.S. capital markets and the Global Vantage (and our) selection criteria. Table 3 reports the composition of the sample according to time, and it is clear that the sample is drawn heavily from the late 1980s.

Our research design is based on a country-by-country comparison of firms with firms in the U.S. To control for differences in industry, market capitalization, and time we randomly select 100 matched U.S. samples for each non-U.S. sample. To generate a matched sample for a non-U.S. sample, we randomly select a U.S. firm in the same year, industry group (as defined in Table 1), and market value of equity quintile for each non-U.S. firm-year observation.[21] For each non-U.S. sample, a U.S. firm may appear in more than one matched sample, but never more than once in any matched sample. The U.S. observations are drawn from the annual Compustat history file constructed at the University of Chicago by CRSP. This file contains all firms on any of Compustat's current and research files. We use Compustat rather than Global Vantage for the U.S. matched samples to increase the number of firms that can serve as matches.

5. The Relation between Stock Returns and Accounting Income.

In this section of the paper we compare the relation between stock returns and accounting income for each of the non-U.S. samples with the corresponding matched U.S. samples. Our first tests are similar in spirit to the tests in the seminal work of Ball and Brown [1968] based on the sign (rather than the magnitude) of unexpected earnings. In these tests we examine the amount of information in the sign of unexpected changes in income and the timeliness of that information. Later, we conduct regression tests of stock returns on the level and change in

[21]See Biddle and Seow [1991] for evidence of an industry effect in the relation between earnings and price in the U.S.

income to obtain alternative measures of the informativeness of accounting earnings in the sampled countries.

We assume in our analysis that non-U.S. capital markets function in a manner similar to U.S. capital markets; that is, prices in non-U.S. capital markets reflect information as efficiently as prices in U.S. capital markets. A study by Roll (1988) provides evidence that institutional market characteristics across the world (e.g., the presence of an official specialist and computer-directed trading) are not associated with stock market returns for October, 1987.[22] Tests of market efficiency in foreign stock markets have generally found the markets to be efficient in impounding publicly available information. Similarly, information content studies conducted in foreign markets have generally found accounting information to possess information content.[23]

A. The Sign of Earnings Changes—Information Content and Timeliness.

We calculate the market-adjusted stock return that could be earned based on the knowledge of the sign of the change in income. We cumulate the market-adjusted returns for the 15 months ending three months after the fiscal year end. The market-adjusted return for a firm-return period is the compound with-dividend return for the firm for that period less the

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[22]Roll (1988) investigates the relation between October 1987 stock returns for several countries (including all countries in our sample) and a world market index response coefficient and various institutional market characteristics, and finds that the only significant explanatory variable for October 1987 returns is the world market index response coefficient (beta). Roll (1988) also examines the relation between the world market index response coefficient and various institutional market characteristics and finds that two market characteristics, continuous auctions and forward trading, are marginally significant in explaining the world market index response coefficient. Market liquidity (size) is also found to be unrelated to stock market returns.

[23]Hawawini (1984) surveys more than 280 studies of the efficiency of capital markets in 14 European countries. Market efficiency in Japan is studied by Sakakibara, et all (1988). Choi and Levich (1990) summarize studies investigating the relation between accounting information and stock prices in foreign countries. Lessard (1990) provides a summary of studies of market efficiency and the information content of accounting disclosures in foreign markets.

comparable return on the equally-weighted portfolio of our sample firms for that country.

For each year with data in a particular country-specific sample, we rank firms by the change in income (deflated by the beginning of year price), and form an equally-weighted hedge portfolio that is long the highest 40% of the stocks in that country-specific sample, and short the lowest 40%. We calculate the returns to the portfolio for each country for the 15 months ending three months after the fiscal year end. We pool observations from different years and calculate a hedge portfolio return and t-statistic for each non-U.S. sample and for each of its 100 matched U.S. samples. The cross-country means and t-statistics assume that the country-specific means are independent. For the non-U.S. samples we report the hedge portfolio return (and related t-statistic). For the 100 matched U.S. samples we report the median of the 100 average U.S. hedge portfolio returns (and the median of the related t-statistics). We also compare the non-U.S. hedge portfolio return to the distribution of U.S. hedge portfolio returns. For each non-U.S. hedge portfolio return, we present the percentile for this return in the distribution of the hedge portfolio returns of the 100 U.S. matched samples. If the non-U.S. and the matched U.S. hedge portfolio returns are drawn from the same population, the non-U.S. hedge portfolio return should not appear in an extreme percentile in the matched U.S. sample distribution.

Table 4 presents the returns to the non-U.S. hedge portfolios and the median of the returns to the 100 matched U.S. hedge portfolios. According to our return metric, all of the non-U.S. samples using domestic accounting standards with full consolidation (see Panel A) earn significantly positive returns on the hedge portfolios. These results, which confirm the results of Ball and Brown [1968] for a large sample of countries, provide evidence that accounting earnings reflect value-relevant information in all of the sample countries.

The results also reveal that the return to a trading strategy based on perfect foreknowledge of the sign of unexpected earnings is no larger outside the U.S. than it is in the U.S. The median of the 100 matched U.S. hedge portfolio returns is greater than the non-U.S. return in all cases. We reject at the 5% level the hypothesis that the non-U.S. sample returns are drawn from the same distribution as the returns for their matched U.S. samples for seven countries: Belgium, Denmark, Germany, Japan, Singapore, Sweden, and Switzerland. For these countries, the non-U.S. return is in the fifth percentile or less of the 100 matched U.S. sample hedge portfolio returns. For nine countries, we cannot reject the hypothesis that the non-U.S. returns are drawn from the same population as the matched U.S. sample; of these, the sample returns from Australia, Canada, France, Ireland, the Netherlands, Norway, South Africa, and the United Kingdom fall short of the matched U.S. hedge portfolio median return by 6% or less, and the returns for the Hong Kong hedge portfolio is smaller than the median of the matched U.S. returns by more than 10%.

The non-U.S. firms not using domestic accounting standards with full consolidation have hedge portfolio returns substantially lower than the median matched U.S. hedge portfolio return (see Panel B). Eight of the nine such portfolios generate significantly smaller returns than the matched U.S. samples, with the other (Switzerland (DS,N)) almost significant. All of the samples of firms using domestic accounting standards but not full consolidation have lower returns than the full-consolidation samples from the countries, particularly Belgium (5% versus 20.4%). Japanese firms using modified-U.S. standards have hedge-portfolio returns similar to those using domestic Japanese GAAP.

The results presented in Table 4 reflect cross-country differences in the dispersion of

market-adjusted returns within each country; therefore, the hedge portfolio return in the U.S. could exceed that in the non-U.S. countries even if the sign of unexpected earnings were equally useful in forming portfolios in the U.S. and non-U.S. samples. For example, if there were less variation in market-adjusted returns in Canada than in the U.S., we could observe lower market-adjusted returns in Table 4 for Canada relative to the U.S. matched sample even though the relative information content of earnings is the same.

We control for cross-country differences in the dispersion of market-adjusted returns by expressing the market-adjusted return on the earnings hedge portfolios as a fraction of the market-adjusted return on stock-return hedge portfolios. The stock-return hedge portfolios are formed assuming perfect foreknowledge of future market-adjusted returns. For each country, we rank firms separately for each year by their 15-month market-adjusted return (ending three months after the fiscal year end) and then form an equally-weighted hedge portfolio that is long the highest 40% of the stocks and short the lowest 40%. The ratio of the return on the earnings hedge portfolio to the return on the stock-return hedge portfolio measures the proportion of all information impounded in stock prices that is captured by accounting earnings, analogous to an r-squared statistic.

In Table 5 we compare the non-U.S. proportions to the distribution of U.S. proportions. For each non-U.S. proportion, we present the percentile for this proportion in the distribution of proportions of the 100 U.S. matched samples. Under the null hypothesis that the non-U.S. and the matched U.S. proportions are drawn from the same population, we expect that the non-U.S. proportions will not fall in either tail of the matched U.S. sample distribution. In marked contrast to the earlier results presented in Table 4, the results in table 5 indicate that the proportion of

total market-adjusted returns explained by earnings is often greater in other countries than in the U.S. The difference between the non-U.S. proportion and the corresponding median U.S. proportion is positive for 8 of the 16 samples of firms using domestic accounting standards and full consolidation (Panel A). These differences are substantial (greater than 10%) for Australia, the Netherlands, and the United Kingdom, and the sample proportions for these three countries and France are in the 99th percentile or greater of the matched U.S. sample distribution. In contrast, four countries (Belgium, Denmark, Hong Kong, and Sweden) have proportions that are substantially lower (by more than 10%) than the matched U.S. sample median, while seven countries have proportions in the 15th percentile or less of the matched U.S. sample distribution.

For the firms not using domestic GAAP and full consolidation (Panel B), the proportion of the market-adjusted return on the stock return hedge portfolio that can be earned assuming perfect foreknowledge of earnings is significantly less for Belgium (DS,N), Germany (DS,D), Germany (DS,N), Japan (DS,N), and Japan (MU,F) than it is for the corresponding matched U.S. sample. None of the non-U.S. samples has a proportion that falls in the upper portion of the matched U.S. sample distribution; therefore, according to our metric, none of these accounting standards reflect information that is more value-relevant than U.S. GAAP. Further, both the Belgian and Swiss domestic standards with no consolidation (DS,N) have a substantially smaller proportion of returns explained than their domestic standards with full consolidation, and the other samples without full consolidation perform less well than their full consolidation counterparts. Interestingly, Japanese modified U.S. GAAP with no consolidation performs as well as domestic Japanese GAAP with full consolidation.

Overall, the results in Table 5 suggest that, relative to the U.S., accounting earnings are

more value-relevant in Australia, France, the Netherlands, and the United Kingdom, but somewhat less value-relevant in Belgium, Denmark, Hong Kong, and Sweden.

As we report in Exhibit 1, U.S. firms are required to report more frequently and on a more timely basis than firms in most other countries. However, the statutory requirements do not necessarily translate into more timely disclosure in the U.S. if competing sources of information are more frequent and more timely in other countries. To shed some light on the information arrival process in the countries investigated in this paper, we plot two measures of timeliness for each country in Figure 1. The plots on the left measure the monthly value (months 1-15) of the cumulative market-adjusted returns to the hedge portfolio formed with perfect knowledge of the sign of accounting earnings (see Table 4), scaled by the total return to the hedge portfolio at the end of the 15 months. Thus, for each month, the plot represents the proportion of the 15 month return to the hedge portfolio that has been earned by the end of the month. By construction, the metric is 1.00 at the 15th month.

The plots on the right of the figure scale the accounting earnings foresight returns by the return on the hedge portfolio formed on the basis of perfect foreknowledge of market-adjusted returns (see Table 5); thus, these right-hand plots contain indices of timeliness scaled by the information content of the accounting numbers, at least partially overcoming the limitations of the simple timeliness measure noted above (namely, if the accounting numbers are virtually meaningless and substantially all of that information is known early in the fiscal year, the simple timeliness measure will reach its peak early). For both plots, the line with "squares" is the metric for the designated country. The top solid line represents the metric for the 95th percentile of the matched U.S. portfolio, the middle solid line is the median, and the bottom solid line is the 5th

percentile.

A review of the left-hand plots suggests that in only two countries (Ireland and United Kingdom) does the value-relevant information reflected in earnings become more quickly impounded into price than in the matched U.S. sample. For six countries (Belgium, Denmark, Hong Kong, Japan, Singapore, and Sweden), the information reflected in earnings is impounded in prices much more slowly than in the U.S. In the remaining eight countries earnings information appears to be reflected in price at approximately the same rate as in the U.S. sample.

For the non-U.S. firms not using domestic GAAP and full consolidation, the three Japanese accounting systems appeared to be more timely than the U.S. sample, while all others (except Italy) are substantially less timely. The value-relevant information for firms using Belgian or German accounting standards but not consolidating appears to disseminate less quickly than for firms in those countries that use full consolidation, whereas Japanese firms that do not consolidate have their value-relevant information reflected in price more quickly than full consolidation Japanese firms.

The right-hand plot reflects both timeliness and the proportion of value-relevant information that is reflected in earnings. On this measure, five countries exceed the matched U.S. sample (Australia, Canada, France, the Netherlands, and especially the United Kingdom), while six countries lag behind the U.S. sample in this measure (Belgium, Denmark, Hong Kong, Japan, Singapore, and Sweden).

For the firms not using domestic (non-U.S.) GAAP with full consolidation, the graphs reveal that, in most cases, the information revealed is uniformly less timely or value-relevant than that of the matched U.S. sample. Additionally, none of the samples using domestic (non-U.S.)

GAAP with no consolidation reveal more timely or value-relevant information than their full-consolidation counterparts, and only the France (DI,F), Italy (DI,F), Japan (MU,N), and Switzerland (DS,N) samples have earnings that are as timely and value-relevant as their matched U.S samples.

We present another test of timeliness in the last column of Table 5. For each of the right-hand side plots in Figure 1, we calculate the area under the plot as the sum of the 15 time-series data points (proportions) used in the plot. The larger the sum of the proportions, the more timely and value-relevant the information. We calculate the area under the plot for each non-U.S. sample and for the corresponding 100 U.S. matched samples, and we report the percentile within the U.S. distribution for the non-U.S. sample (see Panel A). The samples from two countries, the Netherlands and the United Kingdom, have significantly more timely and value-relevant earnings information than their matched U.S. samples, while the Belgium, Denmark, Hong Kong, and Singapore samples have significantly less. Using this percentile metric, none of the samples of firms not using domestic (non-U.S.) accounting standards with full consolidation is shown to disseminate more timely or value-relevant information than the matched U.S. samples (see Panel B). Among the samples of firms using domestic standards without full consolidation, only Japan (DS,N) is as timely and value relevant as the full-consolidation sample.

The two sets of timeliness plots and the area under the plot percentiles suggest that, by these metrics, GAAP from seven non-U.S. countries reflect information that is at least as timely and value-relevant as U.S. GAAP. The seven countries are Australia, Canada, France, Ireland, the Netherlands, and the United Kingdom, and each performs somewhat better than the U.S. on at least one of these measures, and no worse on any other. The results for Germany, Norway,

South Africa, and Switzerland suggest that the GAAP from these countries is similar to U.S. GAAP by these metrics. Finally, the GAAP from six countries appear by most of the metrics to generate less timely and value-relevant information than U.S. GAAP; these countries are Belgium, Denmark, Hong Kong, Japan, Singapore, and Sweden.

B. Net Income Regressions—Information Content.

We report the association between annual accounting earnings and stock returns for our sample countries. There is an extensive debate in the accounting literature about the appropriate specification for these association tests (as evidenced by the papers in the June/September 1992 issue of the *Journal of Accounting and Economics*), although most of the debate has focussed on tests employing U.S. data. We rely on the results reported in Easton and Harris [1991] who use U.S. data to demonstrate that, consistent with models proposed by Ohlson [1990, 1991] and Feltham and Ohlson [1992], both the level of and change in net income before extraordinary items (scaled by the market value of equity) are correlated with stock returns measured over a twelve month window, even if both variables are included in the regression. Some researchers argue that a plausible interpretation of the Easton and Harris results is that net income is the change in value or return when scaled by the market value of equity, and the change in net income scaled by market value is a proxy for growth (see Ali and Zarowin [1992], Lys, Ramesh, and Thiagarajan [1992], and Ohlson and Shroff [1992]). Others argue that the level of earnings (scaled by price) is a proxy for risk (Fama and French [1992 a, b, c]). For the purposes of this paper, we are agnostic concerning the interpretation of the significance or otherwise of coefficients on levels and changes in earnings.

The dependent variable in our regression tests is the return on a firm's common stock

(assuming reinvestment of cash dividends) for a 15 month period ending three months after the fiscal year end.[24] We estimate the relation for each country in our sample separately, treating each firm-year as an independent observation. The error terms in each of these regressions are correlated because the dependent variables (15 month returns) overlap. The standard errors reported in the paper are corrected for the overlap, as described in Appendix A. None of the available valuation models includes an intercept, but we, like others, include an intercept to capture potential miss-specification in the model. We allow the intercept to vary by including dummies for each of the years 1984 through 1990, but we estimate only one slope coefficient for each independent variable for the entire period.

The net income regression estimated for each country is:

$$R_{i,t} = \alpha + \Sigma\delta_t D_t + \beta_1 \Delta NI_{i,t}/P_{i,t} + \beta_2 NI_{i,t}/P_{i,t} + \varepsilon_{i,t} \qquad (1)$$

where:

$R_{i,t}$ = stock return for firm i for the 15-month period ending three months after the end of fiscal year t.

D_t = dummy variables for each year t (1984 - 1990) set equal to one in year t, zero otherwise.

$\Delta NI_{i,t}$ = change in annual net income before extraordinary items for firm i in year t.[25]

$NI_{i,t}$ = annual net income before extraordinary items for firm i in year t.

$P_{i,t}$ = stock price of firm i at the beginning of fiscal year t.

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[24]We also conduct all of the regression tests using a return period of 15 months ending on the latest date on which the firm can present its annual report to the shareholders for approval. The results from those tests are qualitatively similar to the results that we report in the paper.

[25]We also conduct these regressions using the change in, and level of, net income after extraordinary items. The r-squared generally decreases using this measure of earnings for both the non-U.S. and U.S. samples.

The results for the net income regressions are reported in Table 6. We do not test whether simple transformations of the reported income numbers (obtained, in Sweden for example, by adding back changes in untaxed reserves)[26] yield a statistically significant association with stock prices. To the extent that such transformations can be performed with publicly available information, our results understate the informativeness of accounting disclosures for each of the countries. The intercept and annual intercept dummies are reported in the table, although those values have no impact on our inferences. The slope coefficients for the change in net income and net income are reported, together with their associated t-statistics, and the r-squared associated with the slope coefficients only. We additionally report the median coefficient, t-statistic, and r-squared for the 100 randomly selected matched U.S. samples. Table 6 also presents statistical tests that examine whether i) the slope vectors are equal for the U.S. and non-U.S. samples ("F-Stat Equal Slope Coef.," the median F-statistic) and ii) the r-squared for the slope coefficients are equal for the U.S. and non-U.S. samples ("%-tile in U.S. Matched Sample Equal R-Sq"). For this test we report the percentile for the non-U.S. r-squared in the distribution of the 100 U.S. matched sample r-squareds for the slope coefficients.

The results of the regressions for non-U.S. firms using domestic (non-U.S.) accounting standards with full consolidation are presented in Panel A of Table 6. There is considerable variation in explanatory power across countries. With the exception of Sweden, each of the non-U.S. samples produces a statistically significant association between the magnitude of accounting earnings and stock returns. For only six countries (Canada, France, South Africa, Sweden,

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[26]Weetman and Gray [1991], in an analysis of the reconciliation of Swedish GAAP earnings to U.S. GAAP earnings reported on Form 20-F filed with the SEC, found that special tax allowances and transfers to untaxed reserves were the most significant adjustments in the reconciliations.

Switzerland, and the United Kingdom) is the change in net income significant, but this variable is significant for only eight U.S. matched samples. We can reject equality of non-U.S. and matched U.S. sample coefficients in twelve of the sixteen regressions. We are reluctant, however, to draw strong inferences about the measured differences in Table 6 since these coefficients typically differ from their theoretical values in tests employing U.S. data. Using the r-squared of the slope coefficients as a measure of comparison, we see that the earnings regression explains a greater proportion of returns for the Australian and United Kingdom samples than for their matched U.S. firms, and significantly less for the samples from Germany, Ireland, and Sweden.

The results of the regressions for non-U.S. firms not using domestic (non-U.S.) accounting standards with full consolidation are presented in Panel B of Table 6. The level of net income is significant in all regressions except for Germany (DS,D). Change in net income is significant in the Germany (DS,D) regression and in all three of the Japanese regressions; changes in net income is significant but with the wrong sign in the Belgium regression. We can reject equality of the vector of slope coefficients with that of the matched U.S. sample in all but the France (DI,F) and Germany (DS,D) samples. In none of these samples do earnings explain a greater proportion of return than the matched U.S. sample, and the r-squareds are significantly smaller than the matched U.S. sample for France (DI,F), Germany (DS,D), Italy (DI,F), Japan (DS,N), Japan (MU,N). As in the earlier tests, the samples of firms using domestic (non-U.S.) accounting standards without consolidation have a weaker relation between accounting earnings and stock prices than the full consolidation samples, with the exception of Germany (DS,N).

5. Conclusions.

This study compares and contrasts the information content and timeliness of accounting

earnings from several non-U.S. countries and the U.S. Using our metrics of information content and timeliness, we find that accounting earnings prepared in accordance with the domestic GAAP of Australia, France, the Netherlands, and the United Kingdom are at least as timely and value-relevant as accounting earnings prepared in accordance with U.S. GAAP. The accounting earnings from Canada, Ireland, Norway, and South Africa reflect information that is as—or almost as—timely and value-relevant as U.S. accounting earnings. On the other hand, accounting earnings from Germany, Hong Kong, Japan, and Switzerland are either less timely or less value-relevant by our measures, while the accounting earnings of Belgium, Denmark, Singapore, and Sweden are less timely and reflect a smaller proportion of value-relevant information for almost all of our metrics.

An important goal for future research is to examine the informativeness of non-earnings financial statement data, for example cash flows.[27] It is also important to relate differences in the information content and timeliness of accounting data to differences in capital markets across countries. These capital market differences include, for example, financial reporting requirements, disclosure practices, government regulation, and corporate governance. Self-interested regulators, stock exchanges, investors, and managers seldom consider *why* financial reporting requirements differ across countries. Yet these differences—together with greater integration of capital markets—have fueled much of the debate in the United States over the design of listing requirements for non-U.S. stocks. If financial reporting requirements are the product

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[27]The contemporaneous association between stock return metrics and operating cash flows and operating accruals has been researched extensively on U.S. data; see, for example, Bowen, Burgstaler, and Daley [1986, 1987], Rayburn [1986], Wilson [1986, 1987], Bernard and Stober [1989], Livnet and Zarowin [1990], and Dechow [1992]. This topic does not appear to be as widely researched on non-U.S. data. For Australian data see Chia, Czernkowski, and Loftus [1993] and Loftus and Sin [1993].

of market and political forces, it seems unlikely that one set of requirements is optimal for firms in all capital markets, especially when the characteristics of investors differ across capital markets. Therefore, harmonization of financial reporting requirements may not be optimal across countries with different types of investors. Moreover, it may be that when firms seek capital in other than their domestic capital markets (U.S.), other than domestic financial reporting requirements are appropriate for investors in those markets. For example, domestic financial reporting requirements in countries in which banks or affiliated companies are significant providers of capital may not be the appropriate set of standards when firms in those countries raise capital in countries with more diverse investors. This does not imply, however, that U.S. financial reporting requirements are the requirements that should be mandated for non-U.S. corporations who raise capital in the U.S. Indeed, it may be the case that U.S. financial reporting standards are not optimal, even for U.S. capital markets.

Exhibit 1
Summary of Financial Reporting Requirements and Income Tax Rates

Country	Source of GAAP	Interim Reporting Requirements	Reporting Lags for Interim Reports From FPE	Annual Reporting Requirements From FYE	Governmental Agency Regulating Public Companies.	Alignment of Financial and Tax Accounting	GAAP required for Financial Accounting	Disclosure Rank In S&B	Statutory Tax Rate Estimate
Australia	Accounting Standards Review Board (GOV). Companies Act and Codes (GOV).	Semi-annual.	3 mos.	4 mos. of FYE, but preluminary filed within 3 mos. of FYE.	State Corporate Affairs Commissions (CAC).	Low level.	Australian GAAP.	not reported	39%
Belgium	Royal Decrees and Belgium Company Law (GOV).	Semi-annual.		30 days after annual meeting, which must be held within 6 mos. after FYE.		High level.	Belgian GAAP.	not reported	41%
Canada	Accounting Standards Committee of Canadian Institute of Chartered Accountants (PRI).	Quarterly.	60 days.	140 to 170 days days after FYE, depending on Act under which incorporated.	Provincial securities commissions.	Low level.	Canadian GAAP.	7	38%
Denmark	Accounting Law 6/10/81 (GOV). Danish Institute of State-Authorized Public Accountants (PRI).	Semi-annual.	4 mos.	8 days before annual meeting, which must be within 6 mos. after FYE.	Companies Registry (CR).	Low level.	Danish GAAP.	not reported	38%
France	Commercial Code (GOV). Plan Comptable General (Chart of Accounts) (GOV).	Semi-annual (CONS). Quarterly revenues (CONS).	4 mos, except Revenues, 45 days.	45 days after annual meeting which must be held within 6 months of FYE, but a preliminary report published within 4 mos. of FYE and 15 days before annual meeting.	Commission des Operations de Bourse (COB).	High level (PAR).	French GAAP (PAR). IAS GAAP (CONS).	4	42%
Germany	Commercial Code, Stock Corporation Act (GOV).	Semi-annual.		8 mos.		High level.	German GAAP.	2	50%
Hong Kong	Hong Kong Society of Accountants (PRI). Companies Ordinance (GOV). Stock Exchange (PRI).	Semi-annual.	4 mos.	21 days before annual meeting, which must be held within 6 mos. of FYE.		Low level.	Hong Kong GAAP.	not reported	17%
Ireland	Companies Act 1963/90 (GOV). Accounting Standards Committee of the Consultative Committee of Accounting Bodies Limited (PRI). ISEs Continuing Obligations (Yellow Book) (GOV).	Semi-annual.	6 mos.	21 days before annual meeting, which must be held within 9 mos. of FYE.	Registrar of Companies.	Low level.	Irish GAAP.	not reported	40%

Exhibit 1 - continued
Summary of Financial Reporting Requirements and Income Tax Rates

Country	Source of GAAP	Interim Reporting Requirements	Reporting Lags for Interim Reports From FPE	Annual Reporting Requirements From FYE	Governmental Agency Regulating Public Companies.	Alignment of Financial and Tax Accounting	GAAP required for Financial Accounting	Disclosure Rank In S&B	Statutory Tax Rate Estimate
Italy	Civil Code for statutory reporting (GOV). Consiglio Nazionale dei Dottori Commercialisti e dei Roagioniere (GOV). IAS when no other guidance.	Semi-annual.	4 mos.	30 days after annual meeting, which must be held within 4 mos. after FYE (special circumstances can extend to 6 mos).	Commissione Nazionale per le Societa e la Borsa (CONSOB).	High level.	Italian GAAP.	not reported	36%
Japan	Commercial Code (GOV). Business Accounting Deliberation Council (GOV).	Semi-annual. (PAR)	3 mos.	3 mos. of FYE.	Ministry of Finance.	High level. (PAR).	Japanese GAAP.	3	38%
Netherlands	Dutch Civil Code (GOV). Guidelines for Annual Reporting (PRI).	Semi-annual.	4 mos.	5 mos. of FYE, but can be extended an additional 6 months at the annual meeting.	None.	Low level.	Dutch GAAP.	5	35%
Norway	Accounting Act and Companies Act (GOV).	Quarterly or four-monthly.		30 days after annual meeting, which must be held within 6 mos. after FYE.		High level.	Norwegian GAAP.	not reported	51%
Singapore	Institute of CPAs of Singapore (PRI). Companies Act (GOV).	Semi-annual.	3 mos.	3 mos. of FYE.		Low level.	Singaporean GAAP.	not reported	31%
South Africa	Companies Act (GOV). Accounting Practices Board (PRI).	Semi-annual.	3 mos.	21 days before annual meeting, which must be held within 6 months of FYE.			South African GAAP.	not reported	50%
Sweden	Accounting Act of 1976 (GOV). Swedish Tax law (GOV). Companies Act (GOV).	Once per year, for the first 6 to 8 mos. of the fiscal year.	2 mos.	7 days before annual meeting, which must be held within 6 months of FYE.		High level.	Swedish GAAP.	not reported	30%
Switzerland	Swiss Company Law, the Code of Obligations (GOV). Federal and cantonal tax legislation (GOV).	None.		10 days before annual meeting, which must be held within 6 months of FYE.		High level. (PAR).	Swiss GAAP.	1	35%
United Kingdom	Company Act of 1985, amended Companies Act, 1989 (GOV). Acct'g Standards Board (PRI). ISEs Continuing Obligations (Yellow Book) (GOV).	Semi-annual.	4 mos.	6 mos. of FYE.	Registrar of Companies.	Low level.	UK GAAP.	6	33%
United States	Financial Accounting Standards Board (PRI). SEC (GOV).	Quarterly.	45 days.	90 days of FYE.	Securities and Exchange Commission (SEC).	Low level.	U.S. GAAP	8	34%

Notes to Exhibit 1:

1. In countries in which financial reporting requirements vary by firm size, we report the requirements for the largest, publicly traded firms. The most recent reporting requirements we have available are reported. We report the minimum interim and annual reporting lags allowed in the country. The following abbreviations have been used in the Exhibit:

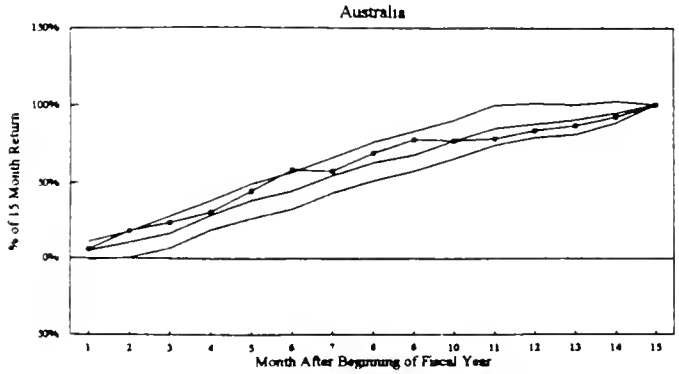
CONS	= Relates only to consolidated financial reports.
FPE	= Fiscal period end.
FYE	= Fiscal year end.
GAAP	= Generally accepted accounting principles.
GOV	= Governmental body.
IAS	= International accounting standards.
PAR	= Relates only to the parent company (unconsolidated) financial reports.
PRI	= Private organization.
S&B	= Disclosure ranking developed in Saudagaran and Biddle [1991] where higher numbers indicate more disclosure.

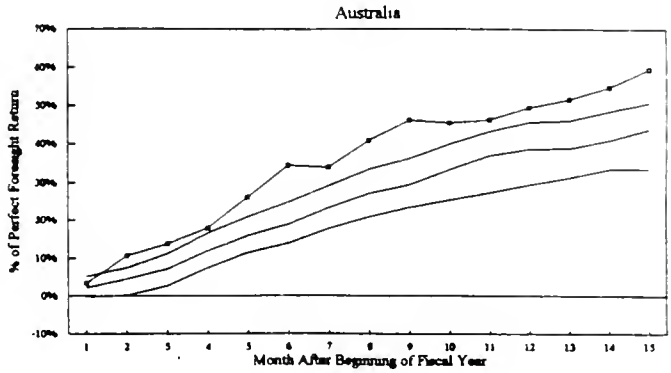
Sources relied on for this exhibit include Alexander and Archer [1991], American Institute of Certified Public Accountants [1992, 1991a-c, 1990, 1988a-c, 1987a-c], Coopers & Lybrand [1991, 1989], Federation des Experts Comptables Europeens [1991], and Price Waterhouse [1992a-e, 1991a-c, 1990a-c, 1989a-c, 1988a,b].

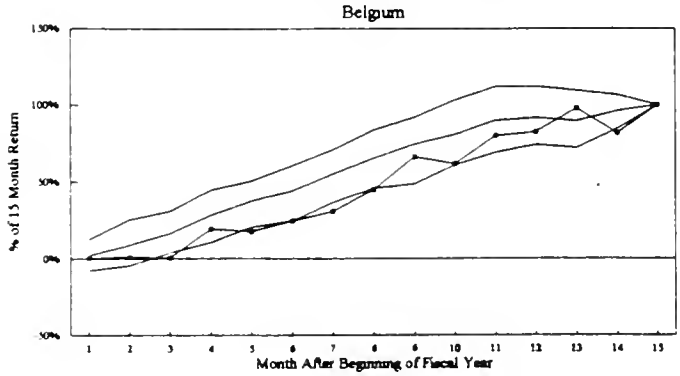
Figure 1

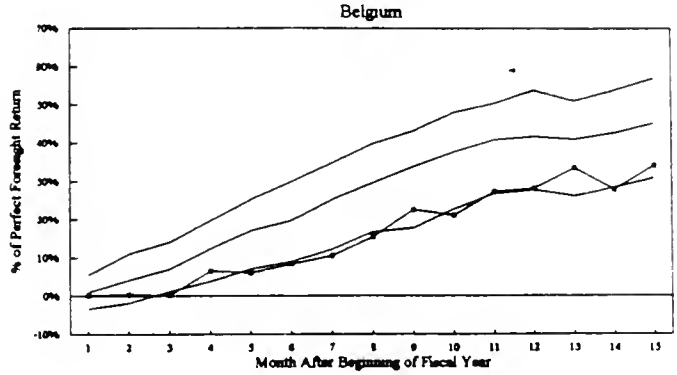
Earnings Pre-Knowledge Hedge Portfolio Returns (EHPR) - 15 Month Returns Start at the Beginning of the Fiscal Year (Right-side plots show EHPR in month t divided by EHPR in month 15, left-side plots show EHPR in month t divided by the hedge portfolio return based on pre-knowledge of the sign of the market adjusted return for the 15 month period)

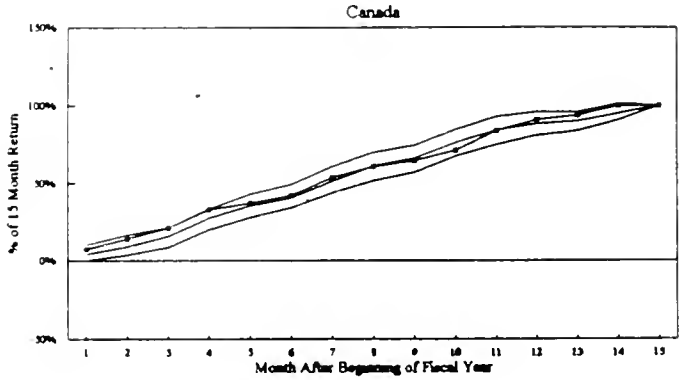
Panel A: Firms Using Domestic (Foreign) Accounting Standards with Full Consolidation.

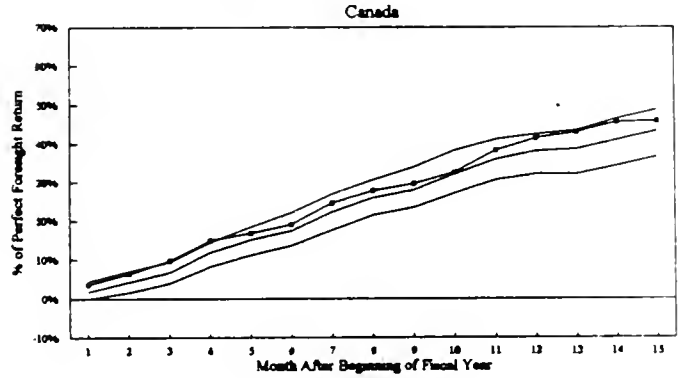


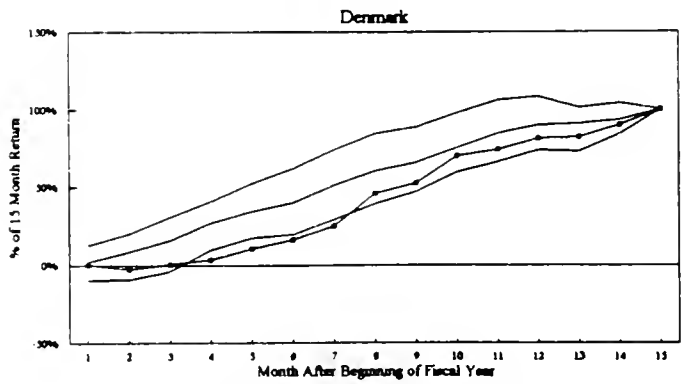












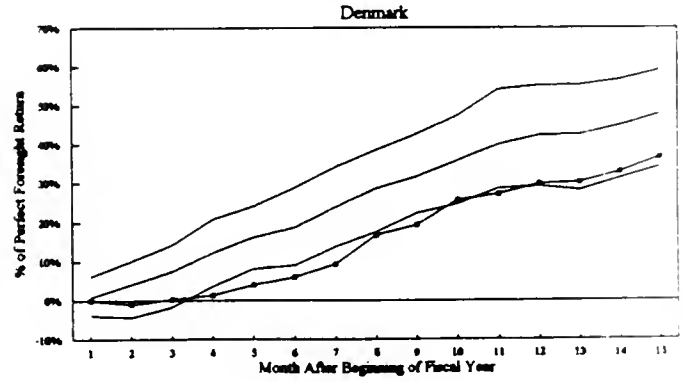
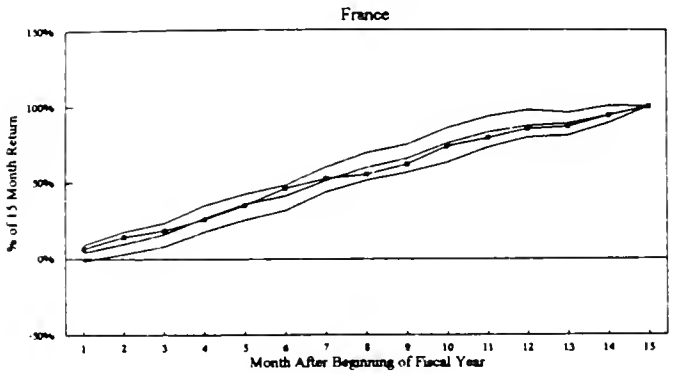
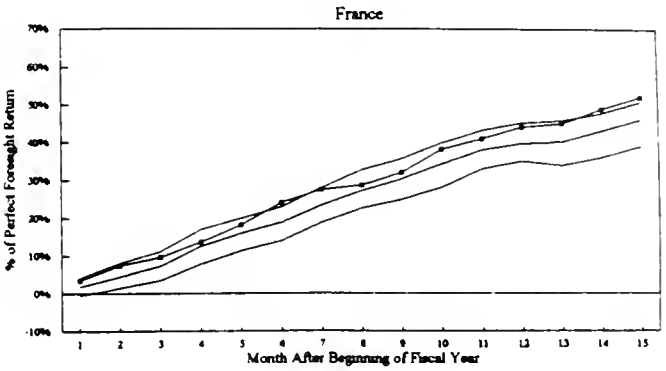


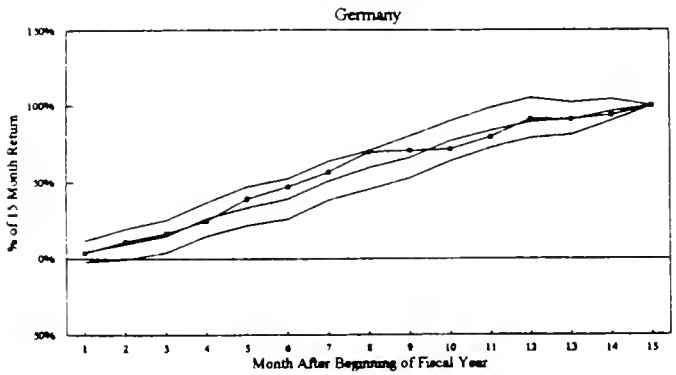
Figure 1 - Continued

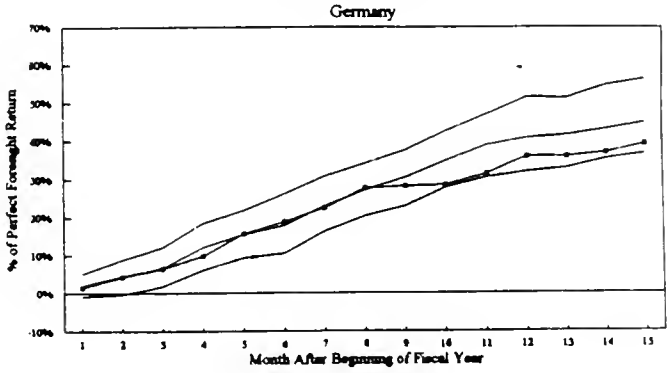
Earnings Pre-Knowledge Hedge Portfolio Returns (EHPR) - 15 Month Returns Start at the Beginning of the Fiscal Year (Right-side plots show EHPR in month t divided by EHPR in month 15, left-side plots show EHPR in month t divided by the hedge portfolio return based on pre-knowledge of the sign of the market adjusted return for the 15 month period)

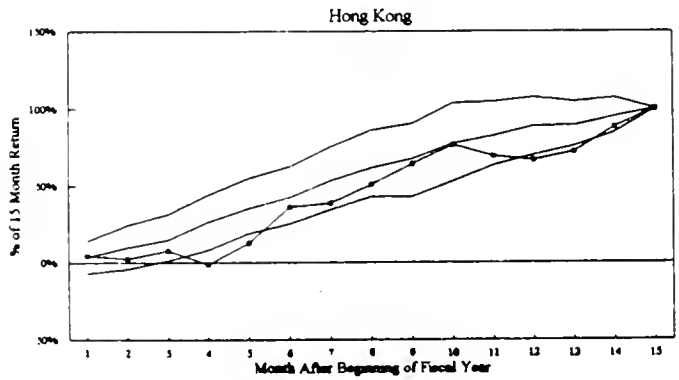
Panel A: Firms Using Domestic (Foreign) Accounting Standards with Full Consolidation.

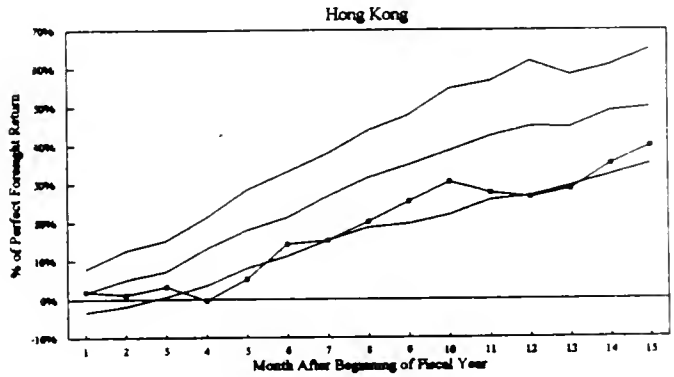


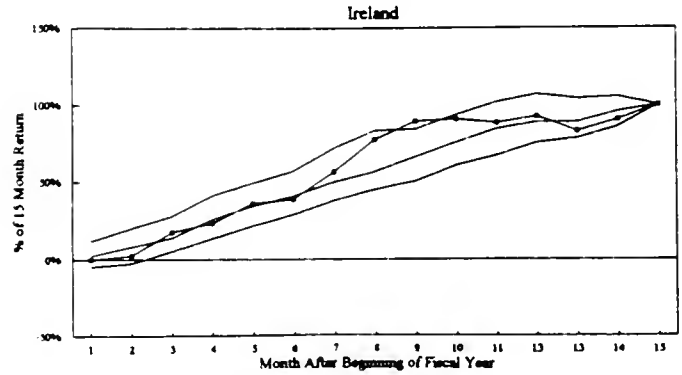












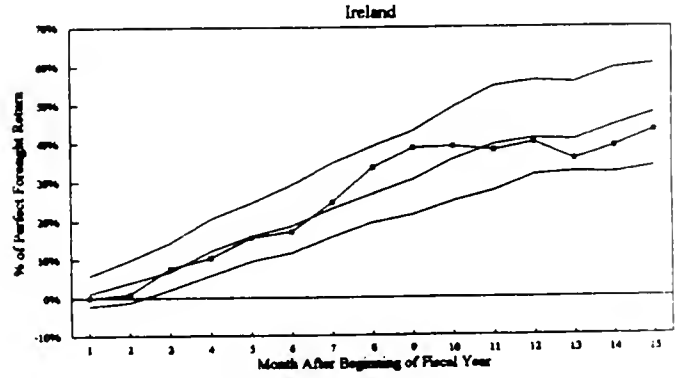
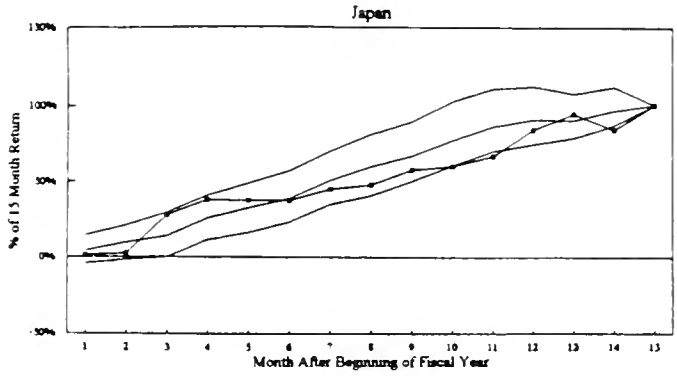
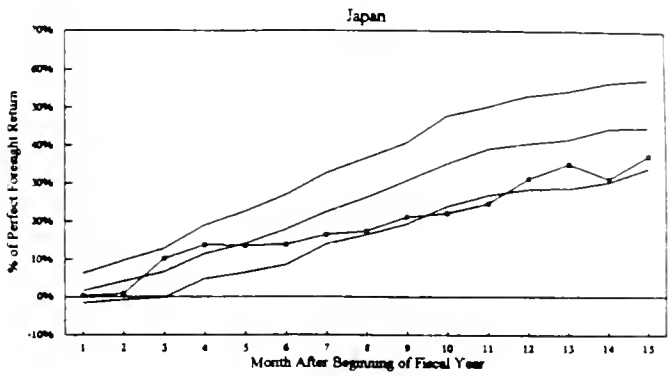


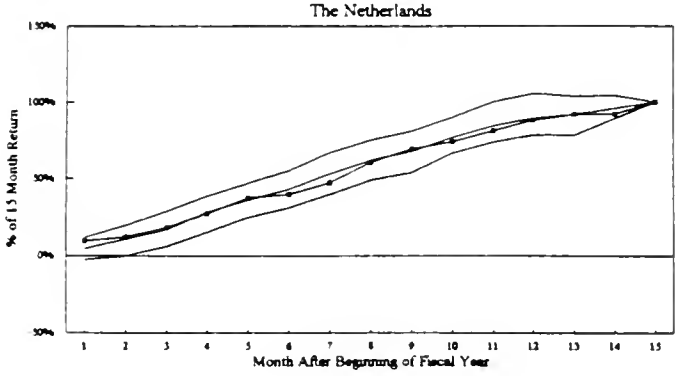
Figure 1 - Continued

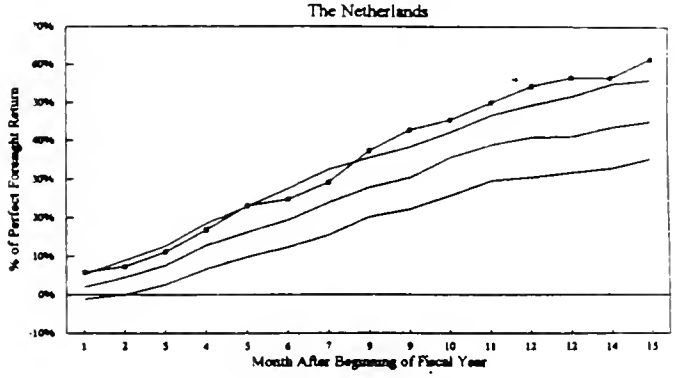
Earnings Pre-Knowledge Hedge Portfolio Returns (EHPR) - 15 Month Returns Start at the Beginning of the Fiscal Year (Right-side plots show EHPR in month t divided by EHPR in month 15, left-side plots show EHPR in month t divided by the hedge portfolio return based on pre-knowledge of the sign of the market adjusted return for the 15 month period)

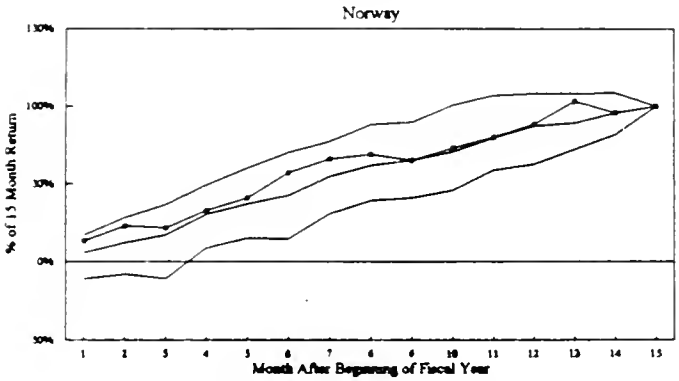
Panel A: Firms Using Domestic (Foreign) Accounting Standards with Full Consolidation.

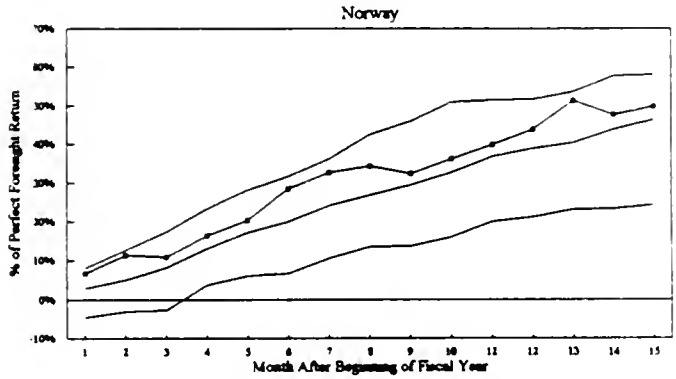


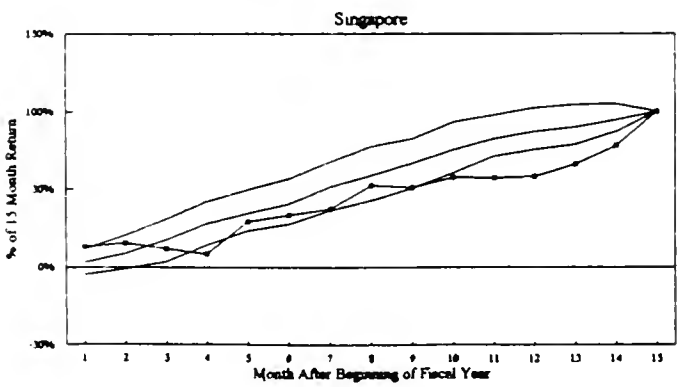












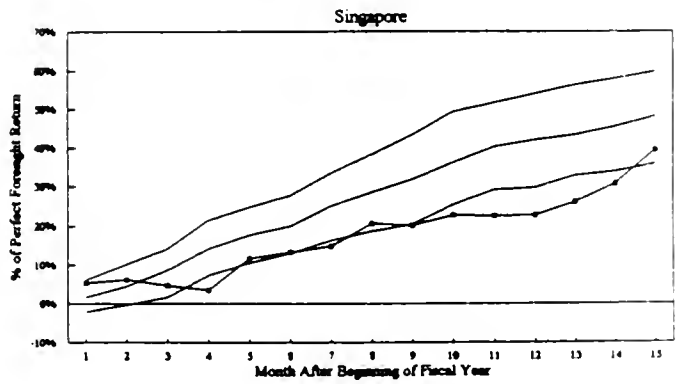
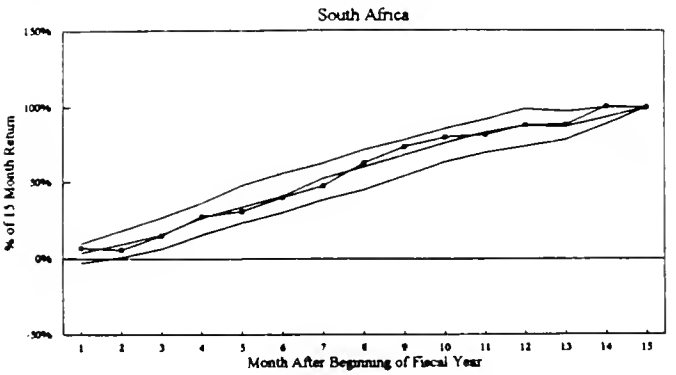
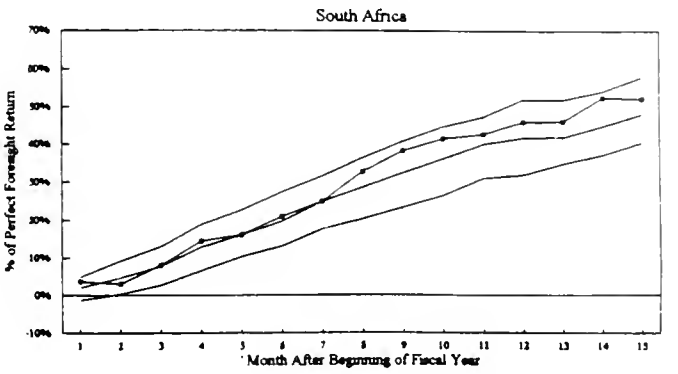


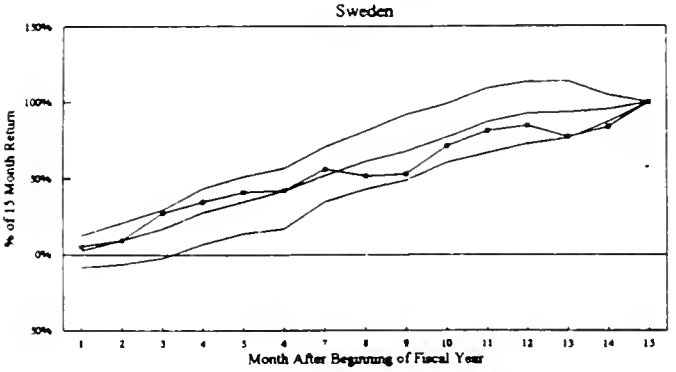
Figure 1 - Continued

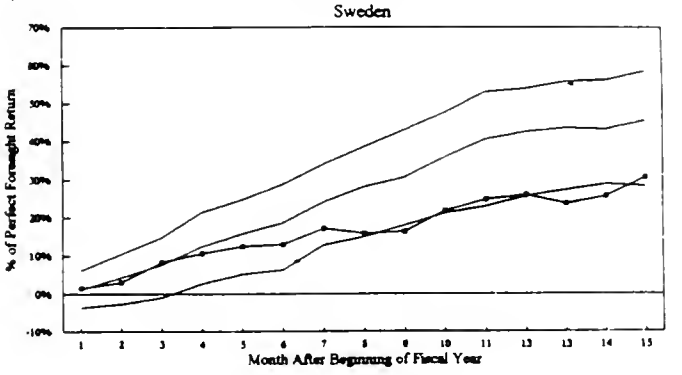
Earnings Pre-Knowledge Hedge Portfolio Returns (EHPR) - 15 Month Returns Start at the Beginning of the Fiscal Year (Right-side plots show EHPR in month t divided by EHPR in month 15, left-side plots show EHPR in month t divided by the hedge portfolio return based on pre-knowledge of the sign of the market adjusted return for the 15 month period)

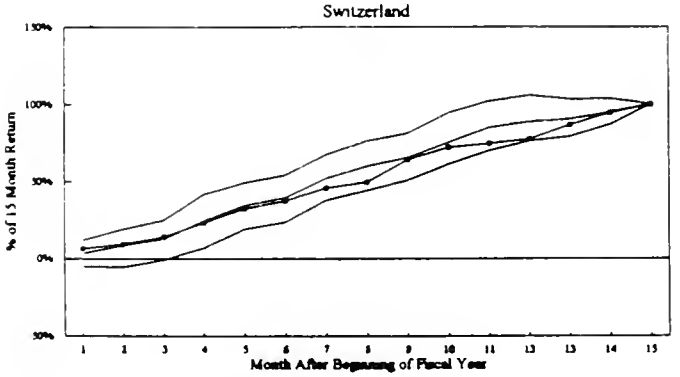
Panel A: Firms Using Domestic (Foreign) Accounting Standards with Full Consolidation.

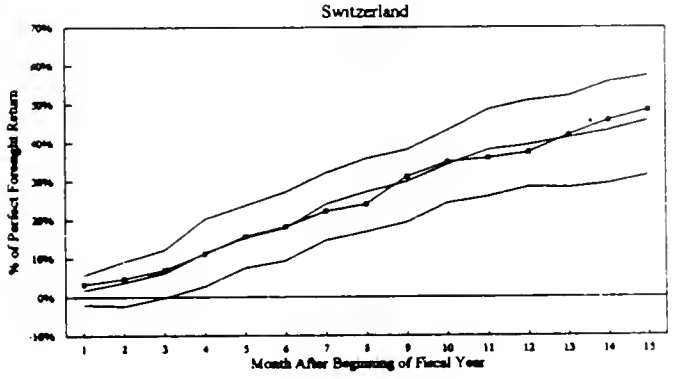


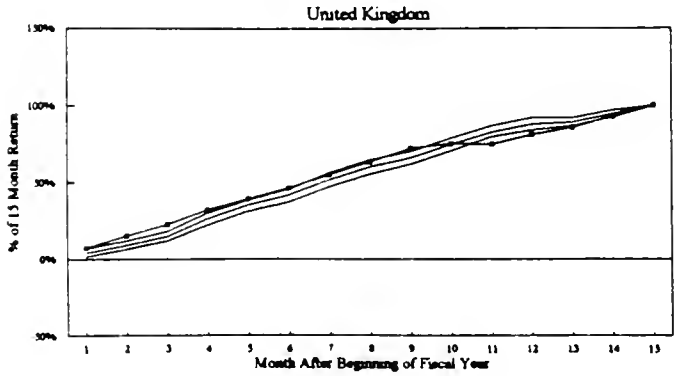












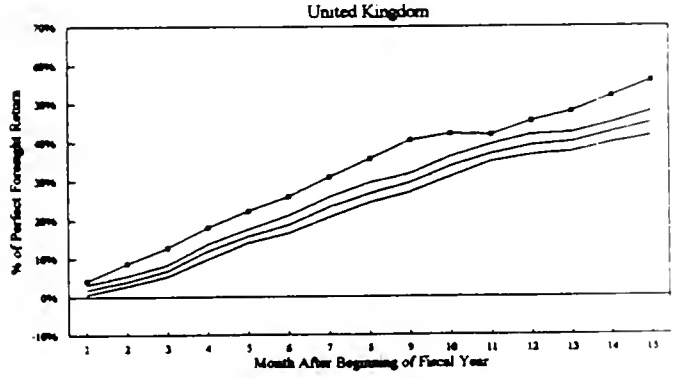
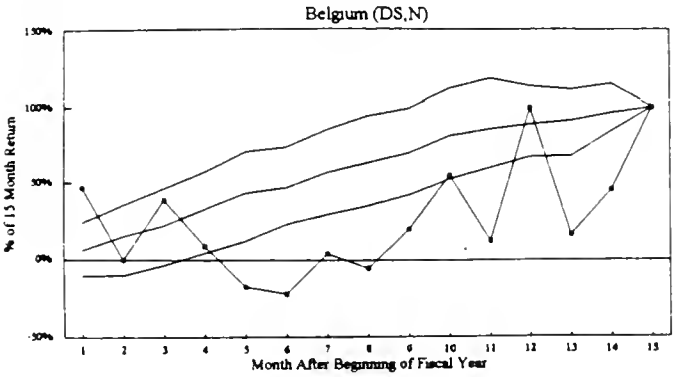
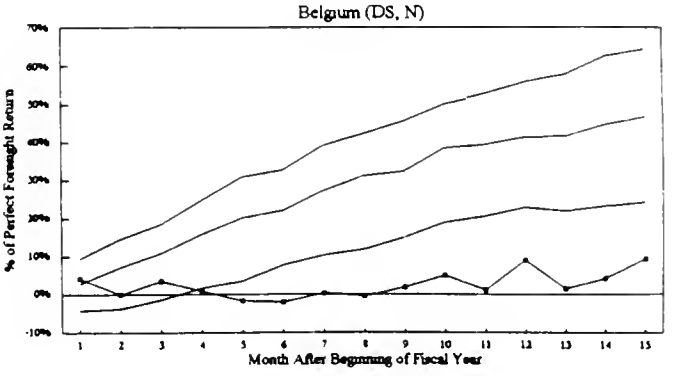


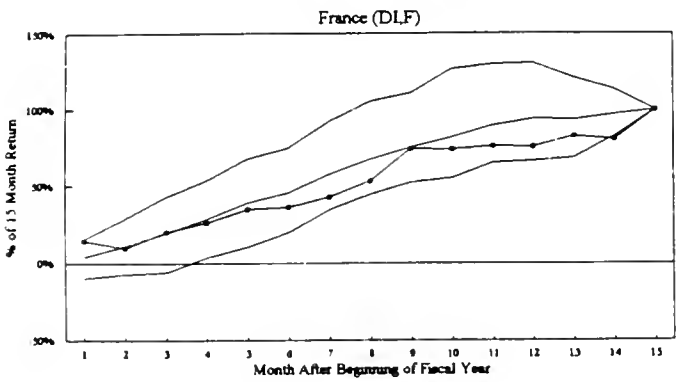
Figure 1 - Continued

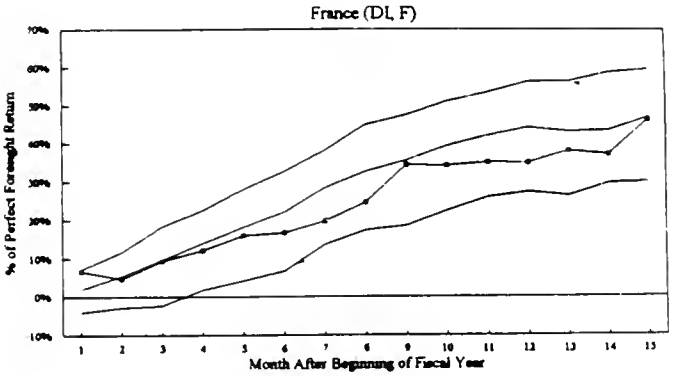
Earnings Pre-Knowledge Hedge Portfolio Returns (EHPR) - 15 Month Returns Start at the Beginning of the Fiscal Year (Right-side plots show EHPR in month t divided by EHPR in month 15, left-side plots show EHPR in month t divided by the hedge portfolio return based on pre-knowledge of the sign of the market adjusted return for the 15 month period)

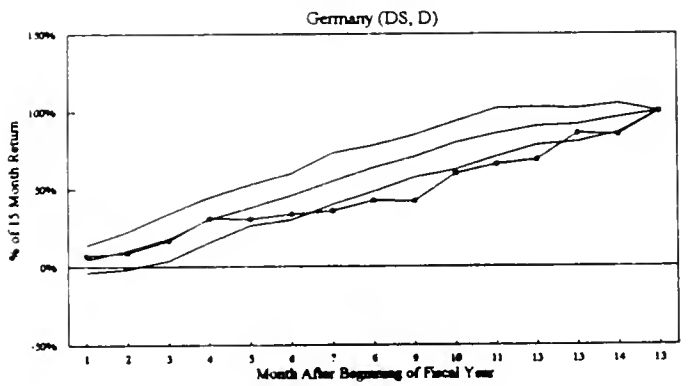
Panel B: Firms Not Using Domestic (Foreign) Accounting Standards with Full Consolidation.

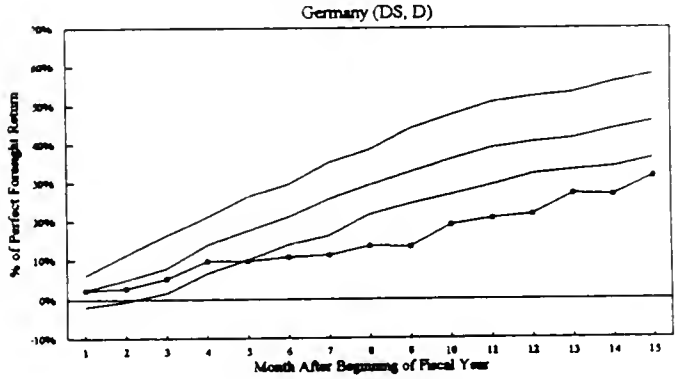


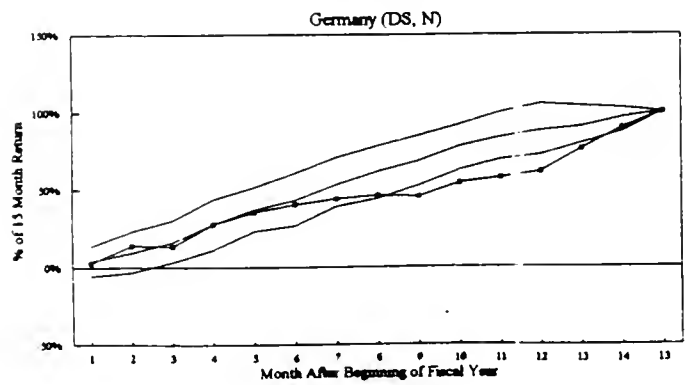












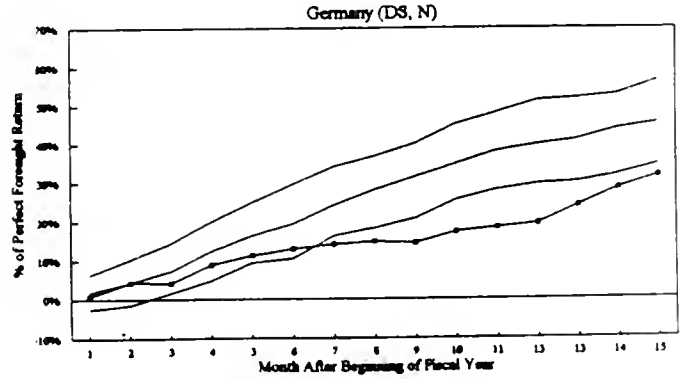
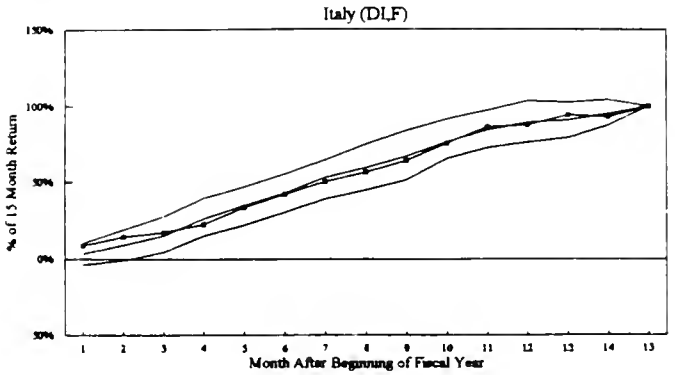
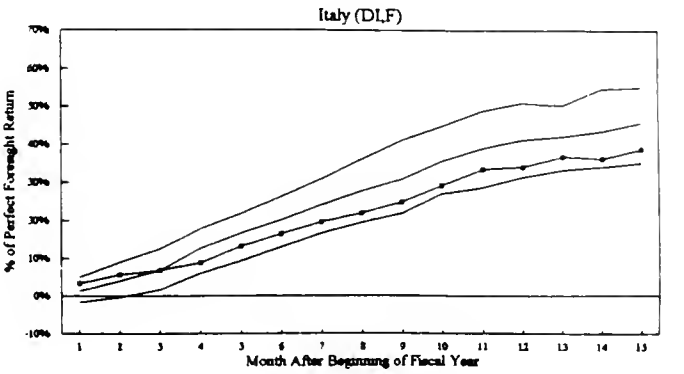


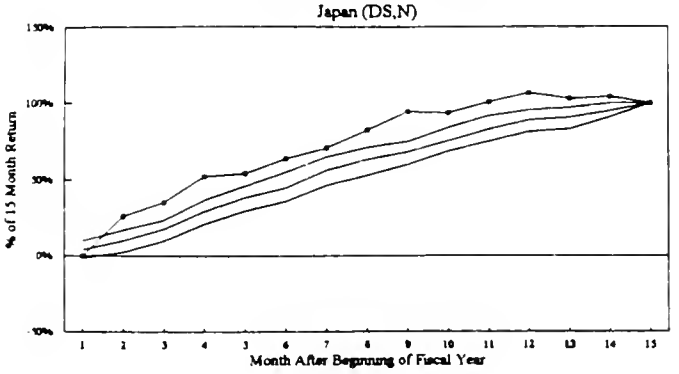
Figure 1 - Continued

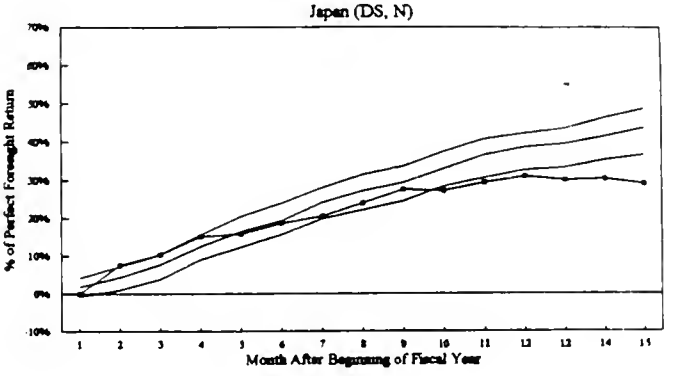
Earnings Pre-Knowledge Hedge Portfolio Returns (EHPR) - 15 Month Returns Start at the Beginning of the Fiscal Year (Right-side plots show EHPR in month t divided by EHPR in month 15, left-side plots show EHPR in month t divided by the hedge portfolio return based on pre-knowledge of the sign of the market adjusted return for the 15 month period)

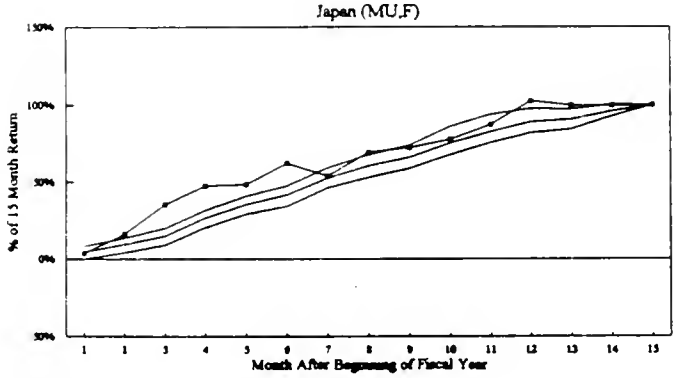
Panel B: Firms Not Using Domestic (Foreign) Accounting Standards with Full Consolidation.

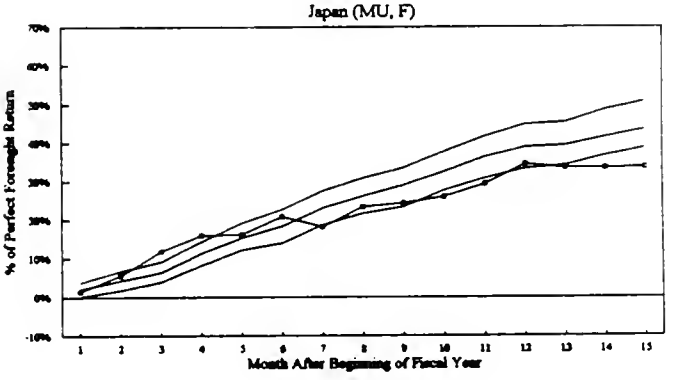


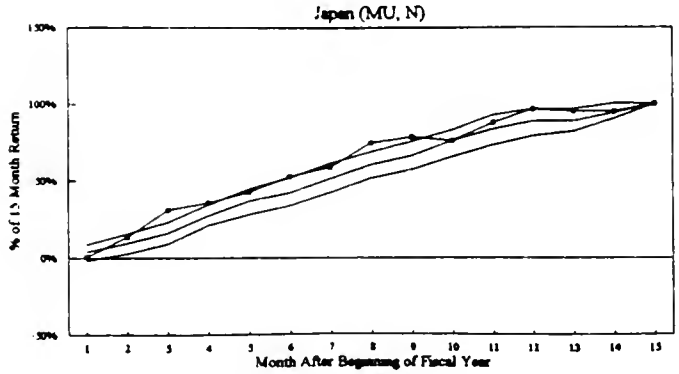












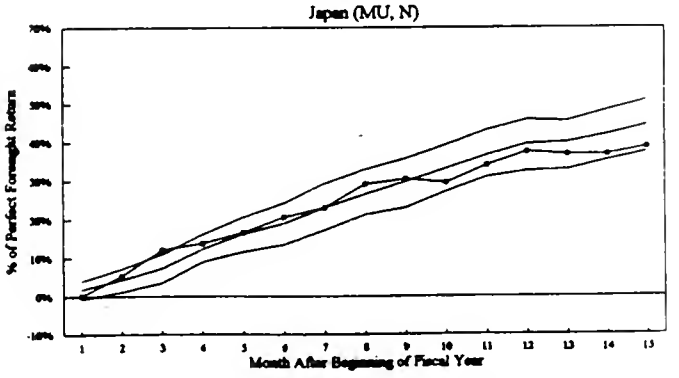
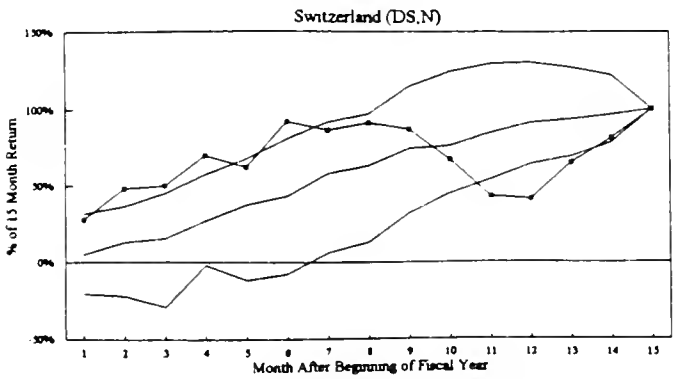
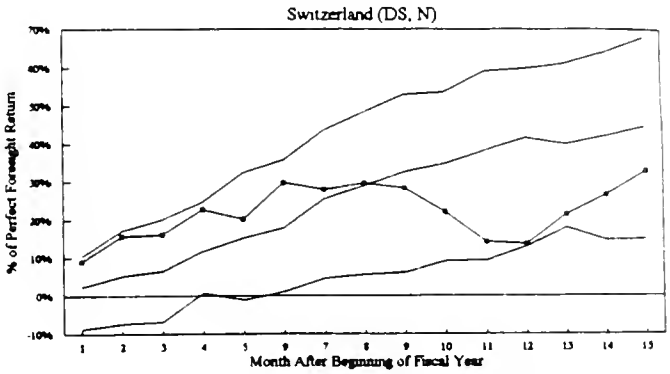


Figure 1 - Continued

Earnings Pre-Knowledge Hedge Portfolio Returns (EHPR) - 15 Month Returns Start at the Beginning of the Fiscal Year (Right-side plots show EHPR in month t divided by EHPR in month 15, left-side plots show EHPR in month t divided by the hedge portfolio return based on pre-knowledge of the sign of the market adjusted return for the 15 month period)

Panel B: Firms Not Using Domestic (Foreign) Accounting Standards with Full Consolidation.





Notes to Figure 1:

1. Panel A is the sample for all non-U.S. countries on Global Vantage with at least 100 observations (firm-years) meeting the minimum data requirements and that use domestic (non-U.S) generally accepted accounting standards (GAAP) and full consolidation.
2. Panel B consists of non-U.S. companies on Global Vantage that do not use domestic (non-U.S) GAAP and full consolidation. The accounting standard and level of consolidation for each country sample are listed parenthetically as follows: DS = domestic GAAP, DI = domestic GAAP generally in accordance with international accounting standards, MU = modified U.S. GAAP, N = nonconsolidated (parent only), F = fully consolidated, and D = only domestic subsidiaries consolidated.
3. The left-hand side graphs show the percentage of the total 15-month earnings hedge portfolio cumulative market-adjusted return (CAR) by month. The earnings hedge portfolios are formed by going long in the top 40% and short in the bottom 40% of perfect earnings foresight firms. The following metric is calculated for each month:

$$\frac{\text{Earnings Hedge Portfolio CAR in Month t}}{\text{Earnings Hedge Portfolio CAR in Month 15}}$$

The line through the squares presents the CAR of the non-U.S. sample firms. The top solid line represents the 95th percentile CAR of the matched U.S. sample CARs. The middle solid line presents the median, and the bottom solid line presents the 5th percentile of the matched U.S. sample CARs.

4. The right-hand side graphs show the earnings hedge portfolio cumulative market-adjusted return (CAR) by month scaled by the 15 month return on the stock return hedge portfolio. The earnings (stock return) hedge portfolios are formed by going long in the top 40% and short in the bottom 40% of perfect earnings (return) foresight firms. The following metric is calculated for each month:

$$\frac{\text{Earnings Hedge Portfolio CAR in Month t}}{\text{Stock Return Hedge Portfolio CAR in Month 15}}$$

The line through the squares presents the CAR of the non-U.S. sample firms. The top solid line represents the 95th percentile CAR of the matched U.S. sample CARs. The middle solid line presents the median, and the bottom solid line presents the 5th percentile of the matched U.S. sample CARs.

Table 1

Distribution of Country Specific Samples Across Business Sectors

Country	Number of Obs.	Two Digit SIC Code Business Sectors (% of Country Sample) 20	22-23	24-27	28-30	33-34	35-36	37	38	50-51	52-59	Misc.
Panel A: United States.												
Compustat Universe	18,946	4	3	8	13	7	27	4	11	7	11	4
Panel B: Non-U.S. Firms Using Domestic (Foreign) Accounting Standards and Full Consolidation Method.												
Australia	447	17	0	9	18	17	10	5	0	7	6	11
Belgium	163	13	0	7	25	12	5	0	0	0	20	19
Canada	855	9	1	21	11	18	11	4	2	8	13	4
Denmark	153	12	3	7	16	7	16	0	7	13	7	12
France	665	11	2	6	15	8	17	2	2	10	20	6
Germany	370	6	2	8	21	12	22	6	3	3	6	10
Hong Kong	118	3	24	3	0	0	15	8	3	8	32	2
Ireland	205	19	7	12	3	1	2	2	0	27	8	20
Japan	197	9	8	5	16	10	28	3	4	3	9	7
Netherlands	308	11	8	19	16	6	8	1	3	19	6	3
Norway	110	7	0	9	26	5	38	0	1	9	4	0
Singapore	190	21	0	4	7	9	5	14	1	15	17	8
South Africa	358	17	4	8	9	11	7	6	0	4	23	10
Sweden	170	4	1	26	8	5	18	5	9	12	7	4
Switzerland	250	12	0	7	9	10	22	0	6	8	13	13
United Kingdom	2,878	11	5	7	11	8	14	5	5	13	16	6
Panel C: Non-U.S. Firms Not Using Domestic (Foreign) Accounting Standards and Full Consolidation Method.												
Belgium (DS, N)	92	0	15	9	0	36	16	8	0	7	9	1
France (DI, F)	96	19	4	1	29	2	4	7	11	2	0	20
Germany (DS, D)	214	16	6	3	12	10	19	10	2	4	5	14
Germany (DS, N)	258	16	1	2	16	8	22	7	2	3	5	17
Italy (DI, F)	278	6	17	9	17	14	16	9	2	0	2	9
Japan (DS, N)	796	13	4	6	20	14	22	6	3	5	3	5
Japan (MU, F)	1,168	5	4	2	21	7	30	7	9	5	7	4
Japan (MU, N)	714	6	3	8	21	12	24	6	2	7	8	5
Switzerland (DS, N)	60	28	0	5	0	7	43	0	0	5	12	0

Notes to Table 1:

1. The sample for Panel A is all firms on COMPUSTAT fulfilling the minimum data requirements.
2. Panel B is the sample for all non-U.S. countries on Global Vantage with at least 100 observations (firm-years) meeting the minimum data requirements and that use domestic (non-U.S) generally accepted accounting standards (GAAP) and full consolidation.
3. Panel C consists of non-U.S. countries on Global Vantage that do not use domestic (non-U.S) GAAP and full consolidation. The accounting standard and level of consolidation for each country sample are listed parenthetically as follows: DS = domestic GAAP, DI = domestic GAAP generally in accordance with international accounting standards, MU = modified U.S. GAAP, N= nonconsolidated (parent only), F = fully consolidated, and D = only domestic subsidiaries consolidated.
4. Number of Obs. is the number of observations (firm-years) in each country sample.
5. Two digit SIC Code Business Sectors are the business sectors that we developed by combining two digit SIC codes into groups of similar industry types for SIC Codes 20-39 and 50-59. The miscellaneous category (Misc.) includes all two digit SIC codes not included in any of the other Business Sectors.
6. % of Country Sample is the percentage of the country observations in each business sector.

Table 2

Distribution of Country Specific Samples Across U.S. Market Capitalization Deciles

Country	Number of Obs.	U.S. Market Capitalization Deciles (10=largest, % of Country Sample)									
		1	2	3	4	5	6	7	8	9	10
Panel A: Non-U.S. Firms Using Domestic (Foreign) Accounting Standards and Full Consolidation Method.											
Australia	447	0	1	3	6	9	10	16	24	23	9
Belgium	163	6	6	7	5	11	9	13	16	18	10
Canada	855	0	1	2	4	7	10	16	22	25	13
Denmark	153	2	7	2	7	10	16	25	18	11	3
France	665	0	1	2	5	8	11	18	24	24	6
Germany	370	0	0	0	1	4	5	11	22	31	26
Hong Kong	118	0	0	3	9	14	15	22	21	11	4
Ireland	205	18	10	11	14	11	13	10	9	3	2
Japan	197	0	0	0	0	0	0	3	16	52	29
Netherlands	308	1	3	5	6	11	11	19	17	16	11
Norway	110	0	1	5	9	14	10	18	24	12	7
Singapore	190	0	3	2	8	9	11	23	29	14	1
South Africa	358	1	1	2	4	9	16	21	26	16	4
Sweden	170	3	1	2	2	8	11	17	24	26	6
Switzerland	250	0	0	1	4	10	14	18	21	23	8
United Kingdom	2,878	3	3	5	8	10	13	16	15	15	12
Panel B Non-U.S. Firms Not Using Domestic (Foreign) Accounting Standards and Full Consolidation Method.											
Belgium (DS, N)	92	17	9	11	14	17	13	13	3	2	0
France (DI, F)	96	0	2	2	1	0	3	8	14	34	35
Germany (DS, D)	214	0	0	1	3	14	16	21	18	19	7
Germany (DS, N)	258	4	7	5	6	12	12	19	18	13	5
Italy (DI, F)	278	0	0	3	5	4	12	17	30	18	11
Japan (DS, N)	796	0	0	0	0	2	5	15	34	36	8
Japan (MU, F)	1,168	0	0	0	0	0	0	1	7	29	63
Japan (MU, N)	714	0	0	0	0	0	1	6	15	42	35
Switzerland (DS, N)	60	3	8	7	13	22	18	12	15	2	0

Notes to Table 2:

1. Panel A is the sample for all non-U.S. countries on Global Vantage with at least 100 observations (firm-years) meeting the minimum data requirements and that use domestic (non-U.S) generally accepted accounting standards (GAAP) and full consolidation.
2. Panel B consists of non-U.S. countries on Global Vantage that do not use domestic (non-U.S) GAAP and full consolidation. The accounting standard and level of consolidation for each country sample are listed parenthetically as follows: DS = domestic GAAP, DI = domestic GAAP generally in accordance with international accounting standards, MU = modified U.S. GAAP, N= nonconsolidated (parent only), F = fully consolidated, and D = only domestic subsidiaries consolidated.
3. Number of Obs. is the number of observations (firm-years) in each country sample.
4. U.S. Market Capitalization Deciles are deciles constructed for each year (1983 - 1990) based on the beginning market capitalization of U.S. firms on COMPUSTAT with decile 10 containing the largest firms. The non-U.S. firms are assigned to deciles each year based on their beginning of the period market capitalization (converted to U.S. dollars).
5. % of Country Sample is the percentage of the country observations in each market capitalization decile.

Table 3

Distribution of Country Specific Samples Across Years

Country	Number of Obs.	Years (% of Country Sample) 1983	1984	1985	1986	1987	1988	1989	1990
Panel A: Non-U.S. Firms Using Domestic (Foreign) Accounting Standards and Full Consolidation Method.									
Australia	447	12	13	13	13	15	12	12	11
Belgium	163	8	11	12	13	15	12	13	15
Canada	855	10	12	13	14	14	13	12	12
Denmark	153	3	6	8	10	11	16	23	23
France	665	10	10	11	11	14	12	16	17
Germany	370	5	6	7	8	10	15	22	26
Hong Kong	118	4	5	11	9	12	14	21	23
Ireland	205	10	12	13	11	13	11	15	16
Japan	197	2	3	4	5	7	10	23	48
Netherlands	308	6	8	9	12	14	13	19	19
Norway	110	6	9	13	15	14	13	14	17
Singapore	190	9	9	11	9	13	13	17	18
South Africa	358	9	10	11	11	13	14	15	16
Sweden	170	7	10	12	11	13	13	19	15
Switzerland	250	6	7	7	9	14	17	19	22
United Kingdom	2,878	11	12	13	13	14	12	12	12
Panel B: Non-U.S. Firms Not Using Domestic (Foreign) Accounting Standards and Full Consolidation Method.									
Belgium (DS, N)	92	14	15	15	12	12	13	10	9
France (DI, F)	96	7	7	6	8	11	13	23	24
Germany (DS, D)	214	15	15	15	15	14	10	8	7
Germany (DS, N)	258	11	12	14	14	11	12	15	12
Italy (DI, F)	278	1	3	5	10	15	18	22	26
Japan (DS, N)	796	15	17	17	16	12	10	7	5
Japan (MU, F)	1,168	8	10	11	12	13	14	15	17
Japan (MU, N)	714	13	14	13	13	13	12	12	9
Switzerland (DS, N)	60	10	10	10	10	15	20	15	10

Notes to Table 3:

1. Panel A is the sample for all non-U.S. countries on Global Vantage with at least 100 observations (firm-years) meeting the minimum data requirements and that use domestic (non-U.S) generally accepted accounting standards (GAAP) and full consolidation.
2. Panel B consists of non-U.S. countries on Global Vantage that do not use domestic (non-U.S) GAAP and full consolidation. The accounting standard and level of consolidation for each country sample are listed parenthetically as follows: DS = domestic GAAP, DI = domestic GAAP generally in accordance with international accounting standards, MU = modified U.S. GAAP, N= nonconsolidated (parent only), F = fully consolidated, and D = only domestic subsidiaries consolidated.
3. Number of Obs. is the number of observations (firm-years) in each country sample.
4. Years are the years in the sample, 1983 - 1990.
5. % of Country Sample is the percentage of the country observations for each year.

Table 4
Market Adjusted Returns to Hedge Portfolios based on Perfect Knowledge of Earnings Signs
15 Month Period Ending 3 Months After the Fiscal Year End

Country	# Obs	Non-U.S. Sample Av Return (%)	Non-U.S. Sample t statistic	Matched U.S. Sample Av Return (%)	Matched U.S. Sample t statistic	Difference Av Return (%)	%-tile in U.S. Matched Sample
Panel A: Firms Using Domestic (Foreign) Accounting Standards with Full Consolidation							
Australia	357	32.2	11.2	34.2	7.5	-2.0	0.31
Belgium	130	20.4	3.6	34.5	4.6	-14.1	0.01 *
Canada	681	28.9	11.6	34.0	10.3	-5.1	0.11
Denmark	123	19.0	4.0	38.7	4.8	-19.7	0.01 *
France	532	36.7	12.3	37.8	9.8	-1.2	0.35
Germany	295	20.6	6.8	38.8	7.2	-18.2	0.01 *
Hong Kong	93	31.0	3.7	43.4	4.7	-12.4	0.08
Ireland	161	33.6	4.8	36.6	5.6	-3.0	0.40
Japan	157	18.7	4.7	40.7	5.2	-22.0	0.01 *
Netherlands	244	30.5	10.0	36.0	6.4	-5.5	0.13
Norway	87	33.9	4.6	40.0	3.9	-6.1	0.32
Singapore	151	26.1	5.0	36.6	5.3	-10.5	0.04 *
South Africa	285	33.8	9.5	37.6	7.5	-3.9	0.22
Sweden	137	15.2	3.5	38.8	4.9	-23.6	0.01 *
Switzerland	201	22.1	6.9	39.6	5.9	-17.4	0.01 *
United Kingdom	2302	34.8	26.4	36.9	20.1	-2.1	0.15
Panel B: Firms Not Using Domestic (Foreign) Accounting Standards with Full Consolidation							
Belgium (DS,N)	71	5.0	0.8	37.6	3.5	-32.6	0.01 *
France (DI,F)	76	25.4	4.2	39.9	3.7	-14.5	0.05 *
Germany (DS,D)	171	16.4	3.8	36.3	5.5	-20.0	0.01 *
Germany (DS,N)	206	15.4	4.8	36.3	6.0	-20.9	0.01 *
Italy (DI,F)	222	21.2	6.0	39.2	6.3	-18.0	0.01 *
Japan (DS,N)	635	16.1	7.0	34.9	10.2	-18.8	0.01 *
Japan (MU,F)	933	16.6	10.3	38.3	12.4	-21.7	0.01 *
Japan (MU,N)	568	22.5	9.0	36.6	9.9	-14.1	0.01 *
Switzerland (DS,N)	44	14.8	2.2	37.4	2.7	-22.6	0.06

Notes to Table 4:

1. Panel A is the sample for all non-U.S. countries on Global Vantage with at least 100 observations (firm-years) meeting the minimum data requirements and that use domestic (non-U.S) generally accepted accounting standards (GAAP) and full consolidation.
2. Panel B consists of non-U.S. countries on Global Vantage that do not use domestic (non-U.S) GAAP and full consolidation. The accounting standard and level of consolidation for each country sample are listed parenthetically as follows: DS = domestic GAAP, DI = domestic GAAP generally in accordance with international accounting standards, MU = modified U.S. GAAP, N= nonconsolidated (parent only), F = fully consolidated, and D = only domestic subsidiaries consolidated.
3. # of Obs. is the number of observations (firm-years) in each country sample.
4. Non-U.S. Sample is the sample of firm-years for the non-U.S. countries meeting the data requirements. Av Return (%) for the non-U.S. sample is the mean market-adjusted return on the perfect earnings foresight hedge portfolio and the t-statistic tests whether this return differs from zero. The hedge portfolio is constructed for each year by going long in the top 40% of the firms and short in the bottom 40% of the firms. The market return is the mean return computed on an annual basis for all firms in each country sample.
5. The Matched U.S. Sample results are the median results for the 100 randomly selected U.S. samples matched on business sector, size quintile and year for each non-U.S. sample. Av Return (%) for the Matched U.S. Sample is the median of the mean market-adjusted returns for the perfect earnings foresight hedge portfolio for the 100 randomly selected matched U.S. samples for each non-U.S. country. The t-statistic for the Matched U.S. Sample is the median t-statistic for the 100 matched U.S. Samples and tests whether the mean market-adjusted return differs from zero. The hedge portfolio is constructed for each year by going long in the top 40% of the firms and short in the bottom 40% of the firms. The market return is computed on an annual basis as the mean return for all U.S. firms on COMPUSTAT in each business sector and size quintile.
6. Difference Av Return (%) is the difference between the Non-U.S. Sample Av Return (%) and the Matched U.S. Sample Av Return (%).
7. %-tile in U.S. Matched Sample is the percentile of the 100 matched U.S. samples in which the Non-U.S. Sample Av Return falls. For example, 0.01 indicates that the non-U.S. average return falls within the first (lowest) percentile of market-adjusted returns for the 100 matched U.S. samples.

Table 5
Market Adjusted Returns to Hedge Portfolios based on Perfect Knowledge of Earnings Signs
15 Month Period Ending 3 Months After the Fiscal Year End
Returns Scaled by Perfect Foresight Returns

Country	# Obs	Average Proportion			Proportion %-tile in U.S.	Area Under the Curve		Area %-tile in U.S.
		Non-U.S. Sample	Matched U.S. Sample	Difference	Matched Sample	Non-U.S. Sample	Matched U.S. Sample	Matched Sample
Panel A: Firms Using Domestic (Foreign) Accounting Standards with Full Consolidation								
Australia	357	0.59	0.44	0.16	1.00 *	5.34	3.74	0.20
Belgium	130	0.34	0.45	-0.11	0.15	2.41	4.03	0.05 *
Canada	681	0.46	0.43	0.03	0.80	4.00	3.63	0.89
Denmark	123	0.37	0.48	-0.11	0.14	2.39	3.97	0.04 *
France	532	0.52	0.46	0.06	0.99 *	4.33	3.81	0.93
Germany	295	0.39	0.45	-0.06	0.10	3.43	3.80	0.22
Hong Kong	93	0.40	0.50	-0.10	0.15	2.75	4.28	0.05 *
Ireland	161	0.43	0.48	-0.05	0.37	3.84	3.83	0.53
Japan	157	0.37	0.45	-0.08	0.15	2.87	3.87	0.11
Netherlands	244	0.61	0.45	0.16	1.00 *	5.21	3.92	1.00 *
Norway	87	0.50	0.46	0.03	0.66	4.62	3.83	0.80
Singapore	151	0.39	0.48	-0.09	0.13	2.65	4.07	0.03 *
South Africa	285	0.52	0.48	0.04	0.80	4.42	4.02	0.80
Sweden	137	0.31	0.45	-0.15	0.08	2.51	3.95	0.09
Switzerland	201	0.48	0.46	0.03	0.65	3.82	3.83	0.51
United Kingdom	2302	0.56	0.45	0.11	1.00 *	4.86	3.76	1.00 *
Panel B: Firms Not Using Domestic (Foreign) Accounting Standards with Full Consolidation								
Belgium (DS,N)	71	0.09	0.47	-0.38	0.01 *	0.37	4.24	0.01 *
France (DI,F)	76	0.46	0.47	-0.01	0.48	3.68	4.35	0.26
Germany (DS,D)	171	0.32	0.46	-0.14	0.02 *	2.25	3.99	0.01 *
Germany (DS,N)	206	0.32	0.46	-0.14	0.02 *	2.26	3.84	0.02 *
Italy (DI,F)	222	0.39	0.46	-0.07	0.12	3.28	3.89	0.14
Japan (DS,N)	635	0.29	0.44	-0.15	0.01 *	3.16	3.73	0.07
Japan (MU,F)	933	0.34	0.43	-0.10	0.01 *	3.28	3.69	0.12
Japan (MU,N)	568	0.39	0.44	-0.06	0.12	3.65	3.77	0.36
Switzerland (DS,N)	44	0.33	0.44	-0.12	0.23	3.28	3.95	0.34

Notes to Table 5:

1. Panel A is the sample for all non-U.S. countries on Global Vantage with at least 100 observations (firm-years) meeting the minimum data requirements and that use domestic (non-U.S) generally accepted accounting standards (GAAP) and full consolidation.
2. Panel B consists of non-U.S. countries on Global Vantage that do not use domestic (non-U.S) GAAP and full consolidation. The accounting standard and level of consolidation for each country sample are listed parenthetically as follows: DS = domestic GAAP, DI = domestic GAAP generally in accordance with international accounting standards, MU = modified U.S. GAAP, N= nonconsolidated (parent only), F = fully consolidated, and D = only domestic subsidiaries consolidated.
3. # of Obs. is the number of observations (firm-years) in each country sample.
4. Average Proportion is the return to the hedge portfolio consisting of going long in the top 40% and short in the bottom 40% of perfect earnings foresight firms scaled by the return to the hedge portfolio consisting of going long the top 40% and short in the bottom 40% of perfect return foresight firms. The non-U.S. sample is the sample of firm-years for the non-U.S. countries meeting the data requirements; the Average Proportions are given in column two. Matched U.S. sample is the 100 randomly selected matched U.S. samples for each non-U.S. sample; the median of the Average Proportions for the non-U.S. samples is given in column three. The difference between the non-U.S. sample average proportion and the median matched U.S. sample Average Proportion is given in column four.
5. Proportion %-tile in U.S. Matched Sample is the percentile of the 100 matched U.S. samples in which the Non-U.S. Sample Proportion falls. For example, 0.01 indicates that the non-U.S. Average Proportion return falls within the first (lowest) percentile of proportions for the 100 matched U.S. samples.
6. Area Under the Curve is the approximation of the sum of the area under the right-hand-side graphs in Figure 1. The metric is the sum of the 15 monthly proportions, with each monthly proportion calculated as the cumulative perfect earnings foresight hedge portfolio return in month t scaled by the 15 month perfect return foresight hedge portfolio return. The non-U.S. sample is the sample of firm-years for the non-U.S. countries meeting the data requirements; the Area Under the Curve is given in column 6. Matched U.S. sample is the 100 randomly selected matched U.S. samples for each non-U.S. sample; the median of the Area Under the Curve for the non-U.S. samples is given in column 7.
7. Area %-tile in U.S. Matched Sample is the percentile of the 100 matched U.S. samples in which the Non-U.S. Area Under the Curve falls. For example, 0.01 indicates that the non-U.S. area under the curve falls within the first (lowest) percentile of the area under the curves for the 100 matched U.S. samples.

Table 6

Regressions of Stock Returns on Changes in and Levels of Net Income for Country Specific Samples

Country	Inter-cept	Coefficients for Yearly Dummy Variables 1984	1985	1986	1987	1988	1989	1990	Change in NI	Level of NI	Slope R Sq	F-Stat Equal Slope Coef.	%-tile in U.S. Matched Sample Equal R Sq	# of Obs.
Panel A: Firms Using Domestic (Foreign) Accounting Standards with Full Consolidation														
Australia	0.04	-0.09	0.11	0.07	0.24	-0.20	-0.09	-0.38	-0.05	3.43	20.8%	19.33 *	1.00 *	447
									-0.12	8.53				
U.S. Sample	0.28	-0.32	0.07	-0.03	-0.31	-0.16	-0.24	-0.36	0.57	1.14	13.7%			
									2.90	6.50				
Belgium	0.29	-0.04	0.25	0.16	-0.07	0.40	0.11	-0.31	-0.10	0.73	14.4%	4.93 *	0.57	163
									-0.74	5.32				
U.S. Sample	0.20	-0.22	0.20	0.06	-0.28	-0.09	-0.13	-0.25	0.36	1.34	13.6%			
									1.03	4.12				
Canada	0.29	-0.26	0.12	0.06	-0.37	-0.28	-0.40	-0.32	0.93	1.37	15.4%	5.43 *	0.81	855
									5.89	8.33				
U.S. Sample	0.34	-0.38	0.01	-0.10	-0.36	-0.22	-0.31	-0.42	0.52	1.11	12.9%			
									3.90	8.34				
Denmark	0.63	-0.80	-0.50	-0.95	-0.91	-0.33	-0.39	-0.75	0.13	1.84	10.1%	1.01	0.14	153
									0.33	3.87				
U.S. Sample	0.29	-0.33	0.01	-0.09	-0.35	-0.15	-0.24	-0.36	0.50	1.28	16.3%			
									1.35	4.19				
France	0.55	-0.01	0.34	0.20	-0.84	0.04	-0.32	-0.71	1.05	1.35	14.4%	5.47 *	0.66	665
									6.40	8.88				
U.S. Sample	0.32	-0.36	0.04	-0.11	-0.38	-0.19	-0.26	-0.36	0.54	1.13	13.0%			
									3.47	7.36				
Germany	0.18	-0.26	0.33	-0.14	-0.39	0.09	0.34	-0.28	0.14	1.95	4.8%	1.86	0.01 *	370
									0.31	4.81				
U.S. Sample	0.28	-0.37	0.06	-0.06	-0.33	-0.16	-0.22	-0.32	0.52	1.15	14.2%			
									2.77	5.88				
Hong Kong	-0.41	0.60	0.60	1.05	0.42	0.49	0.29	0.20	0.23	3.35	24.5%	4.95 *	0.81	118
									0.31	4.62				
U.S. Sample	-0.39	-0.02	-0.13	-0.45	-0.24	-0.29	-0.39	0.00	0.52	1.31	18.2%			
									1.44	3.87				
Ireland	0.47	-0.21	0.25	0.42	0.11	-0.03	-0.42	-0.69	0.65	1.62	4.6%	0.30	0.02 *	205
									0.95	2.50				
U.S. Sample	0.24	-0.26	0.09	-0.02	-0.31	-0.09	-0.20	-0.33	0.41	1.48	18.1%			
									1.48	5.57				
Japan	-0.12	-0.04	0.48	0.27	0.43	0.20	0.20	-0.24	4.37	7.50	7.8%	12.55 *	0.12	197
									1.74	4.19				
U.S. Sample	0.26	-0.43	-0.03	-0.07	-0.34	-0.19	-0.21	-0.29	0.50	0.94	13.5%			
									2.09	4.00				

Table 6
Regressions of Stock Returns on Changes in and Levels of Net Income for Country Specific Samples

Country	Inter-cept	Coefficients for Yearly Dummy Variables 1984	1985	1986	1987	1988	1989	1990	Change in NI	Level of NI	Slope R Sq	F-Stat Equal Slope Coef.	%-tile in U.S. Matched Sample Equal R Sq	# of Obs.
Netherlands	0.40	-0.41	0.05	-0.44	-0.77	0.07	-0.38	-0.55	0.39	2.25	11.9%	5.01 *	0.25	308
									1.18	7.24				
U.S. Sample	0.26	-0.30	0.10	-0.02	-0.30	-0.14	-0.24	-0.32	0.46	1.22	14.9%			
									2.15	5.87				
Norway	1.72	-1.52	-1.70	-1.65	-1.59	-1.20	-1.10	-1.74	0.18	1.94	8.5%	0.76	0.22	110
									0.43	3.33				
U.S. Sample	0.16	-0.30	0.10	0.01	-0.23	-0.11	-0.11	-0.19	0.46	1.33	14.5%			
									1.18	3.35				
Singapore	0.10	-0.41	-0.38	0.56	-0.15	0.06	0.32	-0.30	1.75	3.14	7.7%	4.82 *	0.06	190
									1.89	3.63				
U.S. Sample	0.22	-0.26	0.13	-0.05	-0.31	-0.09	-0.17	-0.30	0.51	1.41	18.9%			
									1.69	5.01				
South Africa	0.26	-0.52	-0.16	-0.03	-0.33	-0.33	-0.22	-0.27	1.13	2.21	20.4%	6.41 *	0.76	358
									2.74	6.63				
U.S. Sample	0.27	-0.32	0.05	-0.07	-0.35	-0.15	-0.24	-0.34	0.43	1.44	18.1%			
									2.21	7.10				
Sweden	1.13	-1.16	-0.90	-0.41	-0.93	-0.63	-1.07	-1.32	0.56	0.22	2.7%	5.53 *	0.02 *	170
									2.33	0.94				
U.S. Sample	0.25	-0.33	0.03	-0.02	-0.31	-0.22	-0.26	-0.33	0.39	1.31	14.9%			
									1.28	4.16				
Switzerland	0.32	-0.25	0.22	-0.17	-0.57	-0.21	-0.44	-0.52	1.97	1.09	10.7%	5.12 *	0.25	250
									4.11	4.10				
U.S. Sample	0.24	-0.31	0.04	-0.05	-0.31	-0.14	-0.20	-0.30	0.43	1.32	15.1%			
									1.65	5.26				
United Kingdom	-0.04	-0.03	0.17	0.30	-0.10	-0.13	-0.26	-0.22	1.18	3.57	26.1%	206.21 *	1.00 *	2878
									8.16	23.80				
U.S. Sample	0.33	-0.38	0.00	-0.12	-0.38	-0.21	-0.27	-0.37	0.55	1.16	13.2%			
									7.69	16.16				

Table 6

Regressions of Stock Returns on Changes in and Levels of Net Income for Country Specific Samples

Country	Inter-cept	Coefficients for Yearly Dummy Variables 1984	1985	1986	1987	1988	1989	1990	Change in NI	Level of NI	Slope R Sq	F-Stat Equal Slope Coef.	%-tile in U.S. Matched Sample Equal R Sq	# of Obs.
Panel B: Firms Not Using Domestic (Foreign) Accounting Standards with Full Consolidation														
Belgium (DS, N)	0.47	-0.26	0.07	0.04	-0.40	-0.09	-0.10	-0.51	-0.41	0.70	7.0%	7.23 *	0.06	92
									-2.13	3.08				
U.S. Sample	0.30	-0.42	-0.09	-0.12	-0.38	-0.23	-0.35	-0.51	0.46	1.42	19.2%			
									1.00	3.59				
France (DI, F)	0.25	0.06	0.42	0.38	-0.67	0.21	-0.16	-0.53	0.46	1.81	4.9%	0.50	0.04 *	96
									0.74	2.28				
U.S. Sample	0.21	-0.26	0.16	0.05	-0.29	-0.11	-0.13	-0.29	0.62	1.36	16.4%			
									1.42	3.27				
Germany (DS, D)	0.31	-0.15	0.21	-0.26	-0.46	0.30	0.40	-0.27	0.83	0.65	3.6%	1.33	0.04 *	214
									2.06	1.66				
U.S. Sample	0.29	-0.36	0.06	-0.08	-0.38	-0.18	-0.29	-0.39	0.51	1.33	15.6%			
									1.92	4.66				
Germany (DS, N)	0.30	-0.18	0.04	-0.23	-0.50	-0.07	0.16	-0.25	-0.67	2.72	7.4%	3.33 *	0.07	258
									-1.10	5.01				
U.S Sample	-0.35	0.01	-0.06	-0.34	-0.18	-0.20	-0.35	0.00	0.52	1.29	14.7%			
									1.97	5.15				
Italy (DI, F)	0.52	0.01	0.86	-0.40	-0.87	-0.37	-0.41	-0.82	-0.84	2.44	6.2%	4.36 *	0.04 *	278
									-1.63	5.77				
U.S. Sample	0.32	-0.41	0.07	-0.01	-0.37	-0.18	-0.25	-0.39	0.51	1.18	15.9%			
									2.41	5.63				
Japan (DS, N)	0.30	-0.17	-0.02	0.02	0.33	0.02	-0.07	-0.60	3.34	2.83	5.6%	14.59 *	0.03 *	796
									3.74	3.39				
U.S. Sample	0.31	-0.38	-0.01	-0.09	-0.34	-0.20	-0.26	-0.34	0.56	1.16	12.5%			
									3.73	8.12				
Japan (MU, F)	0.11	-0.21	0.03	0.21	0.27	0.06	-0.08	-0.37	4.62	3.06	7.1%	37.57 *	0.07	1168
									6.26	5.28				
U.S. Sample	0.33	-0.42	-0.03	-0.11	-0.37	-0.24	-0.27	-0.34	0.54	1.05	11.9%			
									4.66	9.43				
Japan (MU, N)	0.20	-0.11	-0.01	0.11	0.22	0.07	-0.08	-0.45	2.62	4.62	5.4%	14.05 *	0.01 *	714
									2.46	4.39				
U.S. Sample	0.32	-0.38	0.01	-0.10	-0.36	-0.21	-0.29	-0.37	0.58	1.05	12.0%			
									3.81	7.23				
Switzerland (DS, N)	0.59	-0.28	-0.17	-0.37	-0.78	-0.59	-0.68	-0.81	-0.75	1.08	3.5%	3.81 *	0.06	60
									-1.17	2.21				
U.S. Sample	0.21	-0.39	-0.01	-0.09	-0.24	-0.12	-0.24	-0.32	0.45	1.56	19.1%			
									0.79	2.66				

Notes to Table 6:

1. Panel A is the sample for all non-U.S. countries on Global Vantage with at least 100 observations (firm-years) meeting the minimum data requirements and that use domestic (non-U.S) generally accepted accounting standards (GAAP) and full consolidation.
2. Panel B consists of non-U.S. companies on Global Vantage that do not use domestic (non-U.S) GAAP and full consolidation. The accounting standard and level of consolidation for each country sample are listed parenthetically as follows: DS = domestic GAAP, DI = domestic GAAP generally in accordance with international accounting standards, MU = modified U.S. GAAP, N = nonconsolidated (parent only), F = fully consolidated, and D = only domestic subsidiaries consolidated.
3. The net income regression estimated for each country is:
$R_{i,t} = \alpha + \Sigma\delta_t D_t + \beta_1 \Delta NI_{i,t}/P_{i,t} + \beta_2 NI_{i,t}/P_{i,t} + \varepsilon_{i,t}$
where:
   - $R_{i,t}$ = stock return for firm i for the 15-month period ending three months after the end of fiscal year t.
   - D_t = dummy variables for each year t (1984 - 1990) set equal to one in year t, zero otherwise.
   - $\Delta NI_{i,t}$ = change in annual net income before extraordinary items for firm i in year t.
   - $NI_{i,t}$ = annual net income before extraordinary items for firm i in year t.
   - $P_{i,t}$ = stock price for firm i at the beginning of fiscal year t.
4. The top half of each box lists the results for the non-U.S. sample firms and median statistics comparing the non-U.S. and the matched U.S. sample regressions. The bottom half of each box lists the median results for the 100 matched U.S. samples.
5. Change in NI presents the coefficient on the change in net income and the associated t-statistic.
6. Level of NI lists the coefficient on the level of net income and the associated t-statistic.
7. Slope R Sq is the r-squared attributable to the change in and level of net income.
8. F-Stat Equal Slope Coef. is the median of the F-statistics testing the hypothesis that the vector of slope coefficients for the non-U.S. sample regression is equal to the vector of slope coefficients for the matched U.S. samples.
9. %-tile in U.S. Matched Sample Equal R Sq is the percentile of the 100 matched U.S. samples in which the Non-U.S. sample r-squared falls. For example, 0.01 indicates that the non-U.S. r-squared falls within the first (lowest) percentile of r-squareds for the 100 matched U.S. samples.
10. # Obs. is the number of observations (firm-years) in each country sample.

Appendix A

We estimate a GLS regression model on pooled cross-section, time-series data with an overlapping dependent variable, the 15 month stock return.[28] For firms with successive observations, the 3 month overlap in the dependent variable results in first-order residual autocorrelation. Therefore, the variance-covariance matrix is block-diagonal, with each block corresponding to the variance-covariance sub-matrix for the sequential observations of a firm. For example, consider a sample comprising eight firm-year observations as follows:

Observation Number	Firm	Year
1	A	1985
2	A	1986
3	A	1987
4	A	1990
5	B	1985
6	B	1990
7	C	1987
8	C	1988

We assume the variance-covariance matrix has the following block-diagonal structure for this sample:

	1	2	3	4	5	6	7	8
1	1	r	0	0	0	0	0	0
2	r	1	r	0	0	0	0	0
3	0	r	1	0	0	0	0	0
4	0	0	0	1	0	0	0	0
5	0	0	0	0	1	0	0	0
6	0	0	0	0	0	1	0	0
7	0	0	0	0	0	0	1	r
8	0	0	0	0	0	0	r	1

where r denotes the residual correlation between adjacent observations for a firm. The overlap is 3 months for a 15 month observation, so we assume that r is 3/15, or .2.

[28] See Johnston [1972].

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